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

Technical Review Coversheet

Applicant: Rutgers, The State University of New Jersey (S411C200084)
Reader #2:   **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Quality of Project Design	40	35
Sub Total	40	35
Resources and Quality of Management Plan		
Resources and Quality of Management Plan		
1. Resources and Management	35	32
Sub Total	35	32
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	4
Sub Total	5	4
Total	105	96

Technical Review Form

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

Applicant: Rutgers, The State University of New Jersey (S411C200084)

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: 35

> **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:**
>
>   The project is proposing seven core objectives using a research framework. The program also intends to partner with numerous middle schools. The objectives are appropriately measured and will be validated. The goals provide opportunities for teachers to learn skills for computer science and will, in turn, provide learning for underserved students (pg. 3-5).
>
>   **Weaknesses:**
>
>   No significant weaknesses were found in the project's goals and outcomes.
>
>   **Reader's Score:**   9

> 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 project provides and established in the literature review a prominent need to increase student access to computer science as early as middle school (pg. 4-6).
>
>   **Weaknesses:**
>
>   No significant weaknesses were found in the project's aim to address the target population for low income, minority, or females in computer science.
>
>   **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.**

Sub

Strengths:

The project provides rationale for the project with up to date research connected to an innovated idea. The partnerships combined with the response to Culturally Responsive Teaching training is a strong aspect of this application (pg. 7-9).

Weaknesses:

The project has limited research base for the culturally responsive teaching aspect of the proposal.

Reader's Score: 9

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

Strengths:

The project is ambitious in its scope, but is strong in the intent to provide a strong CS curriculum for middle school students with training for teachers.

Weaknesses:

The project does not provide a definition for technical support and how it will be applicable in field of study. The project continuously mentions "TA" (technical assistance) and how it will be delivered throughout the grant but does not provide a definition of the term (p. 4, 11).

Reader's Score: 7

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: 32

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:

The project provides a narrative for their management plan with letters of support strong timelines, and key personnel (pg. 12).

Weaknesses:

The management plan lacks specific milestones for piloted objectives.

Reader's Score: 8

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

Strengths:

The project funding request appears in order and reasonable for the project. The project provides student benefit analysis aligned to timeline expectations. The budget is well produced with definitions for each aspect of the plan and the need for the funds (Ex. 2).

Weaknesses:

The applicant provided no significant weaknesses with the project's key personnel.

Reader's Score: 5

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

Strengths:

The project personnel have extensive credentials to supervise a project of this size including members who have served on previous DOE grants in the past. The project team is divided into categories and properly defined. (pgs. 15-16).

Weaknesses:

No significant weaknesses to the project's budget were identified within the application.

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 feedback and continuous improvement plan intends to create structured opportunities for discussion, teacher feedback, and program refinement (pg. 17).

Weaknesses:

No significant weakness to the project's continuous feedback or improvement program were found in the application.

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 project has provided multiple avenues for disseminating information learned from the project including presentations at major technology and education conferences (pg. 20).

Weaknesses:

The grant organizers plan for a local dissemination of information to area school districts not participating in the program but do not provide a strong plan or timeline for this reporting (pg. 18).

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 project plans to use a multi-phased evaluation approach complete with administrative and attitudinal outcomes. The proposal provides a plan for randomized assignment for school participating in the program (Pg. 21).

Weaknesses:

No significant weakness to the project's evaluation methods were identified.

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:

The project provides a plan for data collection and progress monitoring. The phased approach provides for data collection through surveys, interviews, and skills assessments (pg. 22-23).

Weaknesses:

No significant weakness to the project's plan to evaluate the plan and measure outcomes were identified.

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:

The project provides a plan for coding and analyzing along with a strong qualitative research plan (pg. 23).

Weaknesses:

No significant weakness to the project's evaluation methods were identified.

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 has a purposeful intent to provide opportunities for low income students. The intent is to provide opportunities for a broad population of students during the life of the grant. (pg. 2).

Weaknesses:

Project does not provide a breakdown of the students that will be participating in the project by race and does not provide an intent to target low income students for recruitment for computer science and coding programs (pg. 2).

Reader's Score: 4

Status: Submitted
Last Updated: 10/27/2020 03:21 PM

Technical Review Coversheet

Applicant: Rutgers, The State University of New Jersey (S411C200084)
Reader #3: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of Project Design			
1. Quality of Project Design		40	38
	Sub Total	40	38
Resources and Quality of Management Plan			
Resources and Quality of Management Plan			
1. Resources and Management		35	30
	Sub Total	35	30
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	4
	Sub Total	5	4
	Total	105	97

Technical Review Form

Reader #3:   **********

Applicant: Rutgers, The State University of New Jersey (S411C200084)

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: 38

    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:

   The goals, objectives, and outcomes to be achieved by the project are clear and measureable. For instance, Exhibit 1 of the application highlights 7 goals that overall promote technical assistance to middle school teachers that in turn promotes computer science skills among high need middle school students. The goals are broken down into several objectives and measures. These are measureable by means such as technical assistance attendance records, site visit notes, and school administrator interviews (Project Narrative, pp. e29-e31).

   Weaknesses:

   No weaknesses were cited for this factor.

   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 project design will successfully address the needs of the target population. For instance, the application cites that under 6% of students in grades 6-12 in New Jersey public schools were enrolled in a computer science course in 2019. Also, over 80% of students that would be connected to the project are underrepresented minorities (Project Narrative, pp. e31-e33).

   Weaknesses:

   No weaknesses were cited for this factor.

   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.**

Sub

Strengths:

The project reflects up-to-date knowledge from research and practice. For instance, the application cites relatively recent sources related to aspects of the project, such as citing a source from 2017 pertaining to research on the serious shortage of stable and systematic computer science courses, as well as adequately trained teachers to deliver such courses in K-12 education. Several other sources related to this are as recent as 2019 (Project Narrative, pp. e33-e35).

Weaknesses:

No weaknesses were cited for this factor.

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 proposed project would likely make a contribution to increased knowledge or understanding of educational disparities involving the efficacy of tiered levels of technical assistance to middle school teachers that would promote a rigorous computer science curriculum in middle schools, especially for high need students. This would be verified by assessment tools such as and interrupted times series analysis (Project Narrative, pp. e35-e36).

Weaknesses:

The application does not provide adequate clarity about the potential contribution. In particular, the application does not adequately distinguish the proposed technical assistance from the instructional coaching for educators (Project Narrative, p. e35).

Reader's Score: 8

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: 30

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:

The management plan is adequate to achieve the project objectives on time and within budget, in terms of activities, lead or responsible personnel for each activity, and timelines. Exhibit 2 (in the form of a table) highlights activities, lead or responsible personnel for each activity, and timelines across each year of the project; in addition, the activities are categorized in groups by project phase, and each activity is cross-referenced to one of the project's 7 goals. For instance, for the Refine and Administer TA (Technical Assistance) Framework, activities includes plan and prepare, and pilot the framework. These and several other related activities correspond to the first project goal, project leadership team members being the lead personnel, and a timeline over 5 years. Overall, this serves as a framework to establish and monitor the project's progress (Project Narrative, pp. e36 and e38).

Weaknesses:

The application does not provide adequate detail pertaining to the milestones to be accomplished relative to the activities listed reference in the management plan. For instance, in Exhibit 2, there is no milestone related to piloting the technical assistance framework, for example: a milestone indicating the framework having completed its piloting among a specified number of schools (Project Narrative, p. e36).

Reader's Score: 7

2. **(2) 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 relative to the project objectives, design, and significance. For instance, the project budget identifies line item costs projected over a 5-year period, which in sum do not exceed $4 million. Also, the costs overall are broken down into significant detail (Standard Budget Sheet, pp. e7-e8; Budget Narrative, pp. e136-e147).

Weaknesses:

The application does not provide adequate detail about a few line item categories. For instance, the budget narrative does not break down Fringe by proportion for taxes and proportion for insurance (Budget Narrative, pp. e136-e147).

Reader's Score: 4

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

Strengths:

The qualifications of key project personnel are adequate for the project. For instance, the resumes of several key personnel reflect a significant level of training and experience relative to providing technical assistance to K-12 schools, including in computer science. And the project director has experience serving as a principal investigator (PI) on a related on-going project sponsored by the National Science Foundation. This is evidence that the personnel, especially the leadership team, have the capability to carry out the project (Project Narrative, pp. e39-e40; attached personnel resumes, pp. e53-e82).

Weaknesses:

No weaknesses were cited for this factor.

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 application describes procedures that are adequate for ensuring feedback and continuous improvement in the operation of the proposed project. For instance, data sources include student and teacher surveys, technical assistance attendance records, and technical advisory committee input at multiple points in the project (Project Narrative, pp. e41-e42).

Sub

Weaknesses:

No weaknesses were cited for this factor.

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 results of the proposed project would be amply disseminated through relevant conferences and academic journals, which will enable others to use the information or strategies. For instance, the application states that the results will be presented at educational conferences such as the American Education Research Association (AERA), and through papers in academic journals such as Computers and Education (Project Narrative, pp. e42-e43).

Weaknesses:

The application does not provide adequate detail as to the extent to which project results would be disseminated through the Internet. For instance, there is no considerable detail as to whether the results would be posted on the applicant organization's website, or through social media (Project Narrative, pp. e42-e43).

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 evaluation methods, if implemented, would provide evidence about the project's effectiveness, relative to meeting the What Works Clearinghouse standards. For instance, the application describes that the project using a quasi-experimental design, using a comparison groups: one group of teachers would receive the treatment, i.e., technical assistance with a research-practitioner partnership, while another group of teacher would receive just technical assistance (Project Narrative, pp. e43-e47).

Weaknesses:

No weaknesses were cited for this factor.

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:

The evaluation plan clearly articulates the key project components, mediators, and outcomes; in addition, measureable thresholds for acceptable implementation. For instance, the plan specifies research questions that align with outcomes in the project's logic model. And the plan highlights key components consistent with the goals and objectives of the project design, 2) thresholds for acceptable implementation, and 3) corresponding data sources (Project Narrative, pp. e47-e48; Appendix I, p. e112).

Weaknesses:

No weaknesses were cited for this factor.

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:

The evaluation methods would provide valid and reliable performance data on relevant outcomes. For instance, the application refers to the project addressing research questions regarding the impact and implementation of technical assistance framework to teachers, to promote computer science curriculum for high need middle school students in the applicant school districts. This would provide valid data in that it pertains to the need that the project addresses: Disparities in computer science skills among high need middle school students in the applicant school districts, which may be associated with lack of a rigorous computer science curriculum and inadequate teacher preparation related thereto. Also, the application provides clear detail as to the statistical procedures to handle sample attrition (Project Narrative, pp. e48-e49).

Weaknesses:

No weaknesses were cited for this factor.

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 application provides detail to illustrate that the project is designed to improve student achievement in computer science. For instance, the project proposes promoting computer science skills among high-need middle school students among schools partnered with the project; about 80% of these students are underrepresented minorities (Project Narrative, pp. e31-e33).

Weaknesses:

The application does not provide adequate detail about what aspects of middle school computer science that the technical assistance would potentially add rigor to; aspects such as computer science principles, hands-on coding, and the like (Project Narrative, pp. e31-e33).

Reader's Score: **4**

Status: Submitted

Last Updated: 10/26/2020 12:29 PM

Technical Review Coversheet

Applicant: Rutgers, The State University of New Jersey (S411C200084)
Reader #1: **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Quality of Project Design	40	36
Sub Total	40	36
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	25
Sub Total	25	25
Priority Questions		
CPP		
Competitive Preference Priority 1		
1. Computer Science	5	4
Sub Total	5	4
Total	105	98

Technical Review Form

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

Applicant: Rutgers, The State University of New Jersey (S411C200084)

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: 36

   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:

-       The Extending the Computer Science Pipeline project seeks to develop and iterate on the creation of a computer science education technical assistance framework to support teachers and administrators to create computer science experience for students in grades 5-8. (e22)
-       The proposal presents seven goals with a series of aligned objectives, measures, and outcomes for the Extending the Computer Science Pipeline project. (e29-e31) Each of the outcomes are specific and measurable, such as the intent to produce a 10% net increase in computer science achievement.

   Weaknesses:

-       The proposal includes the goal and objective to improve student outcomes for achievement with an outcome goal for 10% net increase in computer science achievement as measured by computer science grades and scores. (e29-e31) There is not a clear standardization of student grades, which often reflect variations across different teachers. The choice of student course grades as a measurable outcome is a noted weakness in the existing goal set based on the inherent variation in that data set.

   Reader's Score: 9

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 proposal presents compelling research that supports the need to engage middle school students in computer science coursework to address significant access gaps that exist for high-needs students with existing computer science opportunities. (e32) The inclusion of a model that increases rigor and relevance in the computer science curriculum is essential to prepare the students of the New Jersey middle schools that will be participating.
-       The proposal focuses on providing technical assistance or technical assistance with a research practitioner

partnership to support them in addressing self-stereotypes that often impact the high-needs students. (e32-e33) The inclusion of a specific mechanism to support teachers in this effort is a noted strength of the proposal.

Weaknesses:

-        No weaknesses are 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:

-        The proposal includes specific research regarding computer science course access and barriers to serving high-needs students in K-12 education. (e33) Additionally, the proposal presents research about the necessity for cultural relevance and personalization to meet the needs of the individual students. These strategies are incorporated into the Extending the Computer Science Pipeline project and reflect current best practices from the research field.

    Weaknesses:

-        No weaknesses are 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 proposal seeks to expand the research base regarding the use of technical assistance or technical assistance with a research practitioner partnership to be able to improve student learning outcomes for computer science with high-needs middle school students. (e35) This has the potential to identify a new strategy to increase knowledge for an effective strategy to support computer science learning.

    Weaknesses:

-        The use of technical assistance is not clearly differentiated from teacher professional learning or instructional coaching for educators when delivering STEM or computer science learning which have a larger research base of support. (e35) The lack of clarity on the specific definition of technical assistance in comparison to these other two strategies is a noted weakness, as it is not clear how technical assistance is an innovation to the field.

    Reader's Score: 7

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

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 proposal builds on an existing project and collaboration between Rutgers and seven local school districts. (e36) This is a noted strength as it demonstrates existing partnership, communication, and collaboration that can support the overall implementation and evaluation of the Extending the Computer Science Pipeline project.
   -        The proposal includes a table of activities, alignment to goals, lead and support personnel assignments, and a clear timeline for implementation. (e38) The table is comprehensive and addresses the creation of the technical assistance framework, implementation of the research practitioner partnership, and the evaluation of outcomes.

   Weaknesses:

   -        The proposal does not clearly include milestones within the project management plan, such as the completion date for the technical assistance framework. (e38) This omission is a noted weakness.

   Reader's Score: 8

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

   Strengths:

   -        The proposal details the expertise of the Center for Effective School Practices at Rutgers in the managing and completion of large-scale grants. (e37) Additionally, the proposal references implementation of industry financial standards from the White House Office of Management and Budget. (e26) This is a noted strength, as it demonstrates that the project leadership has the capacity and tools to manage the resources for the project.
   -        The budget narrative provides a detailed description of all costs in alignment with the activities for the project. (e136-e147) The budget includes funding for student incentives as well as training stipends for teachers, which is a noted strength and demonstrates that the project has planned for resources related to all aspects of the project.

   Weaknesses:

   -        No weaknesses are noted.

   Reader's Score: 5

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

Sub

Strengths:

- The project team members demonstrate clear experience with implementing large scale grants and expertise in developing research practitioner partnerships and supporting computer science experiences in K-12. (e39-e40, e52-e87) This is a noted strength of the proposal and demonstrates clear expertise related to the creation of the technical assistance framework for the project.
- The proposal clearly details the team members that will be involved with all aspects of the project including the leadership team, the administrative, financial, and field implementation team, the technical assistance team, and the independent evaluation team. (e39-e40) Each aspect of the project has specific personnel assigned, which demonstrates a clear management plan to achieve all aspects of the project.

Weaknesses:

- No weaknesses are 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 proposal clearly describes how the leadership team and the administrative, financial, and field implementation team will meet weekly throughout the grant period for continuous feedback and improvement. (e41) Additionally, the proposal details the use of the Plan-Do-Study-Act cycle to engage in continuous improvement related to program implementation. These elements demonstrate a commitment to iterating on the project to improve the overall outcomes over the course of the five year award.
- The project also includes a technical advisory committee to engage in biannual meetings to offer feedback to the project leadership team. (e42) This is a noted strength, as it provides outside expertise to improve overall project outcomes.

Weaknesses:

- No weaknesses are 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 proposal includes a robust dissemination strategy that includes opportunities to share the findings through conferences, peer-reviewed journals, and regional education centers. (e42-e43) The plan is well-balanced and provides opportunities for learning and scaling to new partners, which is a noted strength.

Weaknesses:

- No weaknesses are noted.

Sub

> **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 proposal plans for a cluster randomized control trial in years 3-5 to assess the strategy of providing only technical assistance to teachers delivering the Extending the Computer Science Pipeline project to the middle school students. (e44-e45) If the evaluation is implemented well, it may produce evidence about the project's effectiveness that would meet the What Works Clearinghouse standards without reservations.
   -        The proposal includes randomized assignment of the treatment to the 32 schools that are included in the cluster impact analysis. (e46) The proposal discusses the use of power analyses and how attrition will be addressed in the overall study design. These are all strengths of the evaluation and demonstrate a thoughtful approach to achieving outcomes to inform the effectiveness of the strategy.

   Weaknesses:

   -        No weaknesses are 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:

   -        The proposed evaluation plan clearly articulates the key project components, mediators, and outcomes. (e47-e48) For example, the proposal addresses the use of moderating effects of student race, student gender, CS curriculum, and grade level for statistical differences. The inclusion of these variables for analysis is a noted strength of the overall evaluation design.
   -        The proposal establishes a measurable threshold for acceptable implementation. For example, they will require that all teachers participate in 3 of the 5 technical assistance/professional development site visits each year. This allows for the evaluation to consider the role of implementation fidelity in the overall outcomes and is a noted strength.

Sub

Weaknesses:

- No weaknesses are 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:

- The proposal will use validated items for the measure of computer science teacher surveys, such as the 2018 National Survey of Science and Mathematics Education. The use of existing validated tools and items is a noted strength of the overall evaluation plan.
- The proposal includes specific methodology for each of the qualitative and quantitative data sets to define the analysis and evaluation process. The level of detail and citation of specific strategies is a noted strength.

Weaknesses:

- No weaknesses are 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:

   - The Extending the Computer Science Pipeline project seeks to develop and iterate on the creation of a computer science education technical assistance framework to support teachers and administrators to create computer science experience for students in grades 5-8. (e22) The program is specifically seeking to engage high-need students defined as African American, Hispanic, female, and/or economically disadvantaged. (e22) and intends to serve 25,500 students over the course of the award.

   Weaknesses:

   - The proposal does not clearly define the aspects of computer science that will be addressed in the middle school pathways. (e22) The lack of identified standards that will be addressed is a noted weakness.

Reader's Score: 4

Status: Submitted

Last Updated: 10/26/2020 12:10 PM