

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

Status: Submitted

Last Updated: 10/28/2020 08:20 PM

Technical Review Coversheet

Applicant: Ohio Valley Educational Cooperative (S411C200027)

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	30
Sub Total	35	30
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	5
Sub Total	5	5
Total	105	94

Technical Review Form

Panel #1 - FY20 EIR Early Phase- AP2 STEM - 1: 84.411C

Reader #1: *****

Applicant: Ohio Valley Educational Cooperative (S411C200027)

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 project's overall goal is to increase the number of credentialed teachers in Kentucky. Most of the objectives/outcomes have measurable achievements that will provide data about the success of the project. Including training for families will enhance the success of the project by ensuring families are able to understand the STEM verbiage and expectations for students through computer science family engagement. Pg e19-20; appendix Theory of action Pg e91-92

Weaknesses:

Outcomes 2.1, 2.2, and 3.2 do not utilize specific measures of growth so it is unclear how the project will determine success within each of the outcomes. Utilizing the words "higher rates" and "increase knowledge" does not provide for specified measures within the project. Pg e20

Reader's Score: 8

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 addresses the target population and identifies the lack of qualified teachers to teach computer science lessons and/or courses. Not only does the project focus on high-need, rural schools, it will address inequities in racial disparity and females throughout the 10 schools proposed. By offering micro-credentialing to teachers, it will build a large cadre of teachers who will have exposure to computer science strategies and training and can support those students who have not had exposure with computer science options to this point in their educational career. Pg e23-24

Weaknesses:

No weaknesses noted

Sub

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 project, overall, utilizes up-to-date research within the proposal, except for the research around cycles of inquiry. The implementation of the portfolio method and each teacher creating lessons aligned to state standards add to effective practices of shared responsibility. Providing coaching and mentoring to teachers will increase the chance for success of teachers finishing the credentialing process. Pg e25-29

Weaknesses:

The project foundation focuses on the cycles of inquiry for the instructional design. The research is over 20 years old, so the project may consider finding additional research before implementing the design or ensuring that this specific design is still valid in today's computer science world. Pg e26

Reader's Score: 8

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

Strengths:

The project has the potential to contribute to increased knowledge through the micro-credentialing course work, the collective creation of new lessons in the STEM areas, and through effective strategies learned from both the Professional Learning Community and the required portfolio work. Additionally, the research around rural access can be studied as students in the high-need, rural areas, especially subgroups of females and racial and ethnic minority students have the opportunity to work with the computer science coursework. Pg e24-29

Weaknesses:

No weaknesses 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: 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 project's milestones and timelines are laid out with specific measures and in quarterly cycles. Responsibilities for each component are clearly defined. Pg e29-33; Budget Narrative Pg e104-107; resumes Pg e46-56

Sub

Weaknesses:

Culturally responsive teaching is laid out as a large part of the grant, but the budget and time commitments are only noted for this for year one and not years two through five. With a project of this capacity and working with 10 districts throughout the region noted, it does not seem that .5 FTE for the project director is enough time to ensure full success of the project, although there are major partners who will assist in the success of the project, which may help alleviate some of the heavy lifting. Pg e33; Budget Narrative Pg e104-107; resumes Pg e46-56

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 costs are reasonable for the proposed project. An investment of \$952 per student, given the distance among the districts to be served within the project, will allow for sustainability beyond the 5 year proposed project throughout Kentucky. Additionally, up to 140 teachers will receive a micro-credentialing certificate to meet the need of a large shortage of computer science teachers. Overall, the project's budget is reasonable and clearly defined within the budget narrative. The budget allows for computer science kits to be shared with the 10 schools so teachers can check-out if needed. Pg e25-34

Weaknesses:

No weaknesses noted

Reader's Score: 5

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

Strengths:

The project director, evaluator, and Bloomboard representative have excellent skills and qualifications to lead this project. The experience each brings around managing and implementing federal and state grants will provide guidance to the success of the project. Pg e33-35

Weaknesses:

With the focus on computer science and STEM, the project does not depict any leaders who have experience in the science areas. Additionally, it is mentioned in the management plan that the project will utilize teacher leaders and coaches but does mention the qualifications needed to hold these positions. Pg e30; Pg e34-35; es Pg e46-56

Reader's Score: 4

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

Strengths:

The project utilizes both formative and summative measures to gain feedback for the project. The project will utilize student data three times per year to track the success of the growth of students. The process of fifteen minute check in calls with a sampling of teachers will provide for real-time discussions and immediate feedback and changes to the project. Pg e35-36.

Sub

Weaknesses:

The project does not discuss any advisory committee or group of individuals who will meet to guide the project. The project does not include families, students, or community in the collection or dissemination of feedback and/or continuous improvement efforts. Pg e35-36

Reader's Score: 8

- 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 a thorough plan for dissemination of both research and lessons that will be developed. The team plans to submit for both conference presentations and peer-reviewed journals. Several of the leaders on the team have already published, so this experience will provide a point of reference as the final two years of the project concludes and data and research are prepared to be shared through multiple avenues such as conferences or published articles. Pg e35-36

Weaknesses:

No weaknesses 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: 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:

The project proposes a strong evaluation plan with multiple methods of data collection and will conduct an implementation study to inform immediate program improvement and an assessment of program using an experimental design that will generate findings expected to meet the What Works Clearinghouse standards without reservations. The evaluators have extensively thought through planning for attrition of teacher participants. The project will be implemented at schools with a wide variety of both student population and student demographics, so by aligning and comparing data from similar school demographic data sets will produce more valid results. The idea of sampling participating teachers midway through each year will produce another layer of feedback to ensure the evaluation is utilizing feedback and data to make changes along the way. Pg e37-e41; Evaluation plan Pg e94-95

Weaknesses:

The evaluation plan does not discuss ways data will be collected from family engagement or measuring the implementation of the training around Culturally Responsive Teaching practices. Pg e37-e41; Evaluation plan Pg e94-95

Sub

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:

The project evaluation plan clearly articulates the key project components and offers multiple measures on both summative and formative data points. The measures on student achievement will not only be captured three times per year through formative/interim assessments but also assessed yearly on the Kentucky state test. Teachers will be surveyed, interviewed, and data will be collected around the number of hours they are within code.org and with exposure to their coaching/mentoring throughout the project. Professional Development validity will be measured for fidelity of both providing professional development (success measured through perception surveys) and the implementation of the strategies of the training (measured through coaching sessions, lesson plans, and classroom observations). Pg e30-42

Weaknesses:

No weaknesses 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 project evaluation will provide for valid and reliable data on all relevant outcomes. The project clearly defines five components which will collect and measure extensive data around all five. The use of both formative and summative data points will increase the success of providing a valid and reliable research study. The evaluation plan lays out areas they believe might provide challenges throughout the project and have already considered how they will address these challenges, should they arrive. Pg e30-43

Weaknesses:

No weaknesses 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 project proposes to expand access to computer science courses and to develop rigorous coursework to over 8,400 students. Additionally, the project will be offered in 10 districts that serve traditionally underrepresented students, females, and rural communities. Additionally, the budget allows for purchasing of extensive computer science/STEM resources to

be shared throughout the districts to provide extra support to teachers within the program. Project narrative, abstract, budget narrative

Weaknesses:

No weaknesses noted

Reader's Score: 5

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Technical Review Coversheet

Applicant: Ohio Valley Educational Cooperative (S411C200027)

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	34
Sub Total	35	34
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	104

Technical Review Form

Panel #1 - FY20 EIR Early Phase- AP2 STEM - 1: 84.411C

Reader #2: *****

Applicant: Ohio Valley Educational Cooperative (S411C200027)

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:

The applicant provides very specific and measurable goals and objectives (page e20) that directly support and contribute to the intended outcome of the proposed project. National shortage of computer science teachers is addressed by the proposed project through building greater content knowledge and confidence in computer science instruction in participatin teachers (p. e19). The theory of action (p. e21) adds strength to the application by connecting project inputs (micro-credentials, PD, coaching, etc.) to outcomes (increased student achievement, teacher competence, CS awareness, etc.)

Weaknesses:

None 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 proposed project focuses on STEM and computer science (CS) in an effort to expand access to rigorous CS coursework in rural, high-need, and high poverty areas to spur economic investment as demonstrated by data from Department of Labor (trends in job market, gaps in talent pipeline, shortage in STEM/CS majors) and census tracts (page e23). The applicant demonstrates project rationale (gaps in student achievement in math and science, lack of access to CS and STEM coursework) for strong need to prepare teachers to teach CS and increase their content knowledge and confidence (p. e24).

Weaknesses:

None noted.

Reader's Score: 10

Sub

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

Strengths:

The applicant provides a clear research base (cycles of inquiry, meaningful collaboration, teacher portfolios, instructional coherence) for the proposed project (p. e26). Each component of the research base is linked to recent studies and effective practices. For example, cited research studies show evidence of increased student achievement and teacher performance through the use of teacher portfolios in professional development and teacher evaluations (p. e27).

Weaknesses:

None 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 applicant presents evidence of teacher shortage and credentialing issues for computer science instruction across the nation (p. e29). The proposed project aims to address this issue through an alternative portfolio-based approach to teacher preparation and credentialing, and ultimately raising student achievement in math and science by expanding access to rigorous computer science coursework in rural, high-need settings. The applicant also provides recent reports that reveal a need for further study around teacher readiness and competency for Computer Science education. In this sense, the project has a significant potential to contribute to research and solve a common nation-wide educational problem.

Weaknesses:

None 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: 34

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:

Tables on pages e30-32 outline management plan with timelines and milestones. There is evidence of strong partnership with senior leaders from all managing partners (p. e33) with clearly defined roles and responsibilities. For example, BloomBoard will provide professional development and micro-credentialing services to participating teachers and they play a key role in the implementation of the overall project doing much of the heavy lifting (Full-

Sub

Time effort chart on p. e33).

Weaknesses:

None 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:

Budget items are well planned to provide a strong support system (instructional coaches, regional resource library, teacher stipends) in accomplishing project goals and outcomes (p. e104-106).

Weaknesses:

Budget amount for research partner (American Institute of Research) exceeds 20% of total requested funds, which is wayabove the typical threshold and it's high for the amount of work described.

Reader's Score: 4

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

Strengths:

The applicant lists key program personnel with strong qualifications that match the needs of the proposed project (p. e34-35). Project Director has a track record of managing larger federal grant programs (Race to the Top) in the region previously (p. e34).

Weaknesses:

None 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:

Feedback and continuous improvement practices are embedded into the project design, including but not limited to formal evaluation and ongoing implementation (p. e35). For example, teachers receive feedback on their portfolio artifacts every time they submit micro-credential evidence via BloomBoard. Both BloomBoard reviewers and instructional coaches track teacher portfolios and observational tools to monitor teacher competencies in computer science instruction and make adjustments to the project (p. e36).

Weaknesses:

None 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.

Sub

Strengths:

The proposed project holds substantial promise and potential to contribute to research around Computer Science teaching practices grounded in portfolio-based coaching and micro-credentialing support, which is an original innovation (p. e37).

Weaknesses:

None 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 proposed evaluation design includes a blocked cluster randomized control trial (RCT), which will ensure meeting WWC standards without reservation (p. e38). This is a particularly appropriate experimental design for the applicant considering the geographical spread of the region and multiple districts as it will make representation of treatment and control participants more fair and comparable. Another strength is, the proposed evaluation plan addresses potential threats (e.g. selection bias) appropriately, such as making random assignments close to the beginning of the year to minimize attrition and making credentialing timeline limited to one year for each cohort (p. e39).

Weaknesses:

None 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:

Data collection plan outlined on p. e93 ensures all project components are well triangulated with mixed methods data and evaluation. For example, impact evaluation data includes teacher surveys and student assessment data, while implementation and formative assessment data includes micro-credential module participation, evidence submissions, and Code.org usage data (p. e93).

Sub

Weaknesses:

None 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 fidelity measures, for example attending summer curriculum workshop, participating in minimum coaching sessions and regional PLCs, completing Code.org courses, and micro-credential submissions (p. e43) provide strength, validity and reliability of data and outcomes. The fidelity measures clearly align with the logic model / theory of action (p. e91). Specifically, these measures support the overarching goal of building teacher content knowledge and competencies in computer science instruction.

Weaknesses:

None 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 applicant proposes to expand student access (minority and economically disadvantaged students in particular) to rigorous computer science coursework in grades 3 through 8 in rural settings (p. e22). Students will complete Code.org lessons and the project will measure achievement in math and science. Proposed project will address the shortage of credentialed computer science teachers (p. e21), which will lead to increased access to rigorous CS coursework.

Weaknesses:

None noted.

Reader's Score: 5

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Technical Review Coversheet

Applicant: Ohio Valley Educational Cooperative (S411C200027)

Reader #3: *****

	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	31
Sub Total	35	31
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	25	22
Sub Total	25	22
Priority Questions		
CPP		
Competitive Preference Priority 1		
1. Computer Science	5	5
Sub Total	5	5
Total	105	94

Technical Review Form

Panel #1 - FY20 EIR Early Phase- AP2 STEM - 1: 84.411C

Reader #3: *****

Applicant: Ohio Valley Educational Cooperative (S411C200027)

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 overall goal for the proposed project is to increase the number of teachers who are credentialed to teach elementary and middle school computer science. This is clearly a measurable goal. The applicant identifies, in an objective, how this will be achieved. The participating teachers will demonstrate greater content knowledge and confidence in computer science instruction than non-participating peers. This objective is clearly aligned with three outcomes including that "90% of participating teachers will obtain the Computer Science Micro-Credential." These alignments are specified and measurable. In addition, two other objectives will be addressed. Those include parent participation in computer awareness and student demonstration of higher rates of math achievement. (Pages e19-e20)

Weaknesses:

The overall goal does not include student and parent issues. The overall goal is to increase the number of teachers who are credentialed to teach elementary and middle school computer science. However, the applicant does not identify how the objectives relating to student achievement and parental awareness aligns to that goal. (Page e19-e20)

Reader's Score: 8

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 applicant indicates that only 39% of high schools in Kentucky offer foundational computer science courses that is compared to 45% nation-wide. The rationale for this proposed project is to credential more teachers to introduce computer science principles and computational thinking into the classrooms. The applicant identifies the need for this project through the math assessments which indicate that 60% of third and eighth grade student were performing below grade level in ten of the participating districts. These needs are significant. Two of the objectives and outcomes specifically address these needs and will be addressed by the activities that are part of this proposed project. These design elements are appropriately aligned. (Page e24)

Sub

Weaknesses:

The applicant does not establish clearly the needs of parents as to their need for an increase in knowledge and understanding of computer-science and related career opportunities . No baseline data is provided that would support a significant need for awareness training for parents. Therefore, there is not an established alignment between the need and the objective outlined.

Reader's Score: 8

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

Strengths:

The applicant demonstrates extensive use of up-to-date knowledge from research and effective practice in each one of the three objectives. The collaboration with BloomBoard, Inc. includes the use of credential efforts that are supported by research. For example BloomBoard, Inc uses the research on meaningful collaboration (Hill et.al., 2010). This research will support the professional development and training that is provided for the participating teachers. The research on instructional systems coherence by Newmann in 2011 supports that interrelated programming for students and staff that will be integrated into this proposed project to address increased achievement. The applicant includes several research studies that support the use of family classes to increase parents' knowledge and support for academic success. (Pages e28-e29)

Weaknesses:

None 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 proposed project supports the potential contribution to the understanding of the issues of the lack of qualified, credentialed computer science teachers by providing a micro-credentialing process that will both increase teachers' knowledge and improve students' mathematics achievement. This effort will demonstrate strategies that will improve outcomes among racial and ethnic minority students, girls, students from low-income families, and students in rural areas. If proven successful, these efforts will be able to replicated in similar educational situations . (Pages e22-e24)

Weaknesses:

None 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: 31

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 and includes clearly defined key responsible persons, milestones and specific timelines. These efforts will ensure that the key components of the project will be accomplished on time and within budget. For example, to address the micro-credentials attained by teachers, an eight step process will be utilized effectively within all five years of the project and will include separate schedules for cohort one and two. The management plan also extends to include the evaluation plan implementation. (Pages e29-e31) The details of the management plan will ease the implementation of the project.

Weaknesses:

None 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:

The applicant indicates that at the close of the five-year project, 140 teachers instructing 8,400 students in grades 3-8 will complete their micro-credentials. This is at the cost per student for the project is \$952. That is reasonable for the scope of the project. (Page e33-e34). The personnel budget is appropriate and includes the project director and the computer science instructional coaches. The contractual expenditures are appropriate and are closely aligned with the project design. In the logic model, the applicant clearly supports the costs of the regional library technology that will provide appropriate access to a variety of software applications. (Budget narrative, Page e92, Page e106)

Weaknesses:

None noted.

Reader's Score: 5

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

Strengths:

The qualifications of the key project personnel demonstrate clearly that a variety of training, educational backgrounds, and experiences will provide relevant backgrounds that will provide appropriate leadership and expertise for the project completion. For example, the Project Director has previously administered federal grants and has worked with area superintendents on previous projects such as Race to the Top Early Childhood Challenge Grants.

(Pages e34-e35) (Resumes, Pages e46-e56)

Weaknesses:

The project includes two key positions , the Computer Science Instructional Coaches; however, the applicant does not include a job description or relevant training and experiences that will be required for those positions. Without that information it is unclear what the expectations are for these positions. (Page e104)

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 applicant provides several procedures that ensure adequate feedback and continuous improvement. For example, teachers' lesson plans are reviewed by the BloomBoard partner. The partner then provides feedback for improvement, if needed. Surveys are used for feedback for professional learning activities which include whole group activities. The research partner will conduct direct teacher interviews to reveal barriers and progress. These results will be shared with the project director. Student data will be collected, analyzed and shared three times each year. (Page e35-e36)

Weaknesses:

The application does not include specifics as to the feedback and improvement needed on the parent component of the proposed project. Without that information, it is difficult to determine the adequacy of those processes . (No page reference)

Reader's Score: 8

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 dissemination plan for the proposed project is extensive and purposeful. That plan includes having the partners sharing findings at regional and national conferences. Four teacher leaders will be recruited to present at statewide conferences. The Computer Science Micro-Credential has the potential for commercialization and scalability. The management plan includes appropriate time lines for these activities as well as key persons who are responsible. (Page e37, e32, and letters of support, pages e58-e59)

Weaknesses:

None 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: 22

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 evaluation includes appropriate methods that will produce evidence about the project's effectiveness that would meet the What Works Clearinghouse standards without reservations. The applicant includes four specific impact questions and two implementation questions that when answered will produce strong evidence of effectiveness. The project evaluation will include a blocked cluster randomized controlled trial that will produce appropriate comparisons as to the success of the interventions. (Pages e37-e38)

Weaknesses:

None 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 project evaluation clearly articulates the key project components, mediators, and outcomes. For example, to answer the question, "To what extent does teachers' content knowledge mediate the impact of Computer Science Micro-Credential (CSMC) project on student math achievement?", the applicant will run multiple models to calculate the mediated effect. To address the key project outcomes relating to student math achievement, two measures will be used. The Kentucky statewide assessment (K-PREP) and the Northwest Evaluation Association Measures of Academic Progress (MAP) will be used in the spring of each evaluation year. These are appropriate measurements for that component. To address teacher content knowledge improvements surveys will be developed and administrated in the fall and spring of each year. To address parent component of the project a pre- and post-activity survey will be utilized. (Logic Model, pages e91-93, and Pages e41-e42 and e20)

Weaknesses:

To have a more comprehensive evaluation plan, the inclusion of details to the survey questions and other methods of measurement used is needed. It is difficult to determine the level of the quality of the work completed in the staff development including the coaching, the Professional Learning Communities, and integration of culturally responsive pedagogy. Each of these elements need to have individual measurements of success in addition to the usage data. (Page e36)

Sub

The parent workshop surveys need more details to determine the connection to the career opportunities for students. Without these details, it is difficult to determine the link between these workshops and students making career choices in the computer science field. (Page e110)

Reader's Score: 2

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

Strengths:

The methods of evaluation will provide valid and reliable performance on several relevant outcomes. The applicant indicates that measures and thresholds will be developed and validated for each of the five components of the CSMS program. Those include a summer workshop, coaching sessions, regional Professional Learning Communities's (PLC) participation in Code.org courses and submission of documentations in order to earn the certifications. If these elements are developed to fruition, they will be both valid and reliable . (Page e43)

Weaknesses:

None 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 applicant provides a clear plan to address rigorous computer coursework that will reach traditionally underrepresented students. The proposed project includes a component that will support the cultural competence of the micro-credential process. This will enhance the responsiveness to engaging underrepresented students. The increase in the number of teachers prepared to teach computer science in elementary and middle grades will expand access and participation in rigorous computer science integrated coursework. (Pages e19 and e28)

Weaknesses:

None noted.

Reader's Score: 5

Status: Submitted

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