

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

Status: Submitted

Last Updated: 10/22/2020 05:58 PM

Technical Review Coversheet

Applicant: Orange County Superintendent of Schools (S411C200130)

Reader #3: *****

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

Technical Review Form

Panel #10 - FY20 EIR Early Phase- AP2 STEM - 10: 84.411C

Reader #3: *****

Applicant: Orange County Superintendent of Schools (S411C200130)

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 presents clearly specified and measurable goals, objectives, and outcomes to be achieved by the proposed project (pp. e19- e20). For example, goal one is to build computational thinking (CT) skills through academic instruction focused on inclusive practices and culturally relevant teaching. This goal is supported by clearly specified objectives and activities, such as to provide professional learning to school leadership teams (SLTs) focused on computational thinking (CT) skills, California Multi-Tiered System of Support (CA MTSS), and the Inflexion approach. The sound outcomes, such as to increase the number of teachers who incorporate computational thinking (CT) skills into teaching, are clearly linked to the goals and objectives. In addition, the project design and operationalization of concepts are found in the cohesive logic model (p. e127) which further details intervention activities, and short- term, mid- term, and long-term outcomes, and continuous improvement activities that support project implementation.

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 applicant well describes the extent to which the design of the proposed project is appropriate and will successfully address the needs of the target population or other identified needs. For example, the applicant describes how substantial discrepancies exist in the computer science (CS)-information and computer technology (ICT) pathway for female and Latinx students in the target area. Although nearly half of all students are female, they represent less than 30% of students enrolled in CS or ICT pathways in the past 5 years at schools with ICT pathways (CALPADS, 2014-15 to 2018-19). Also, while just over half of the student population in high schools with ICT pathways are Latinx students, they only represent 31% of CS course and ICT pathway enrollments (p. e21). These data are significant because no other ethnic student groups show notable underrepresentation in CS courses. The proposed project goals will appropriately address these critical underrepresentation issues by

Sub

increasing enrollment and retention of female and Latinx students in computer science (CS) courses. The applicant provides a detailed description of CS Class/ICT pathway enrollment inequities in the district (p.e22), and clearly describes the procedures for determining a candidate pool for the intervention and comparison groups (pp. e21-e23). School Leadership Teams (SLTs) and 9th and 10th grade math and science teachers will be critical to implementing the intervention. These teams will include at least one representative of each of the math, science, and CS departments; and designated teachers will receive training on computational and design thinking skills and participate in their site SLT and a community of practice (CoP).

Weaknesses:

None 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 applicant clearly describes how the design of the proposed project reflects up-to-date knowledge from research and effective practice. For example, school change expert James Spillane and colleagues found that districts' redesigned organizational structures (systems and policies) became organizational routines that facilitated changes in teacher beliefs; promoted collaboration; and supported teachers' abilities to implement a new mathematics curriculum (Spillane et al., 2018). Goode, Johnson, and Sundstrom (2020) further suggest that long-term professional development in growing teachers' understandings and capacity around equity, race, and education is important to allow for teachers' own developmental growth around race, pedagogy, and education. Additionally, the Orange County Workforce Indicators Report (2020) describes how skills in highly technical or creative occupations, such as those in STEM fields, need to be cultivated for the future workforce to stay relevant. Led by the State Department of Education, as a statewide initiative since 2016, the applicant demonstrated how the California Multi-Tiered System of Support (CAMTSS) offers the potential to create needed systematic change through intentional design and redesign of services and supports to identify and match to the needs of all students (pp. e23-e27). The proposed project will build upon and expand these strategies.

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 sufficiently describes the potential contribution of the proposed project to increase knowledge or understanding of educational problems, issues, or effective strategies. The proposed project will build on existing approaches to STEM and CS (Computer Science), by increasing equitable access to the foundational learning of CS for female and Latinx students. For example, female and Latinx students will have the opportunity to discover innovative ways to solve problems in their communities and learn about CS college and career pathways. Another contribution of the proposed project is to cultivate skills that improve equitable representation in the workforce and talent supply chain, which will address educational problems, issues, and effective strategies for students who have been historically denied access to CS. The applicant describes how these students have to overcome barriers such as stereotypes; and/or the lack of professional development for educators; and/or education policies, practices, and structures that did not allow them to participate (Margolis, Estrella, Goode, Jellison-Holme, and Nao, 2017). The proposed project will add to the body of knowledge including effective strategies for empowering learning environments that welcome, incorporate, and respect the identities, cultural assets, and cognitive skills that

Sub

each student brings into the classroom. The proposed project will introduce pathways for female and Latinx students to see themselves in, and to have equitable access to, the world of CS (pp. e28- e29).

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: 35

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 applicant clearly describes a feasible 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. An internal team of OCDE (Orange County Department of Education) educational services staff will oversee all aspects of the intervention, assuming fiscal and reporting responsibility for the grant; organizing professional learning (PL) with schools; and assisting in intervention development, implementation, and research. Also, the Orange County Department of Education (OCDE) will work in partnership with Inflexion to develop intervention materials; implement the intervention with schools; conduct evaluation activities; and continuously improve the intervention materials and process using feasibility and usability mini-case studies (p. e29). For example, the proposed project will be led by the Associate Superintendent of Educational Services and the STEM Administrator will serve as Co-Project Directors, along with Inflexion's Director of Planning, Research, and Evaluation. This strong partnership will ensure appropriate of administrative services by OCDE as well as the implementation of project activities by Inflexion. The applicant provides a clear overview of the management plan which includes a description of focused activities and designated milestones; identifies the personnel responsible; and specifies the project timeline (pp. e30-e31). The budget narrative also describes responsibilities of project personnel which describe how the project will be appropriately managed (p. e150). The proposed project timeline includes activities and milestones (pp. e30-e31), and allows for implementation of interventions to occur across four full academic years, including a school recruitment and program preparation period at the beginning, and a wrap-up and dissemination period at the end. The applicant's timeline for project implementation provides a detailed description of how activities and milestones will be broken down and executed during specified intervals throughout each project year (pp. e119-e126).

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.**

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Strengths:

The applicant's total grant request of \$3,964,304 appears reasonable in relation to the objectives, design, and potential significance of the proposed project (pp. e150- e155). For example, the proposed interventions will be implemented in sixteen high schools, reaching approximately 32,000 students, with long-term impacts on over 1,000 teachers and School Leadership Team (SLT) members from participating schools. The budget lists the project personnel and describes their commitments to this project, as well as detailed descriptions and cost breakdowns for allowable expenses. For example, the project manager, data specialist, and research associate are only 8% of the project budget; and 15% of the project budget will directly support evaluation work (p. e32).

Weaknesses:

None noted.

Reader's Score: 5

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

Strengths:

The applicant sufficiently describes the qualifications, including relevant training and experience, of key project personnel. For example, the applicant lists key personnel from OCDE and Inflexion and describes their relevant training and experience in the core projects components (pp. e32- e33). In addition, the applicant provides curriculum vitas which further detail the qualifications and experiences of key personnel in core project components (pp. e48- e82). The management plan also describes their duties and responsibilities (pp. e30-e31).

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:

The applicant adequately describes procedures for ensuring feedback and continuous improvement in the operation of the proposed project. The project team will ensure feedback through small-scale usability and feasibility studies at treatment schools during each year of implementation (pp. e33-e34). For example, the applicant will gather user satisfaction feedback through their web platform; and school leadership teams will provide feedback through the web platform on their self-assessment instruments and on their experiences with project supports and training. Modifications to the proposed intervention design will be made when indicated by feedback. Each treatment school's leadership team will develop an implementation plan, receiving continuous feedback from Inflexion staff. Inflexion will guide treatment schools through a coherence audit process that will result in school plans to increase the levels of alignment between the school's identified commitment to computational and design thinking and its structures and learning approaches and update action steps.

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.

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Strengths:

The applicant provides a clear plan for disseminating the results of the proposed project in ways that will enable others to use the information or strategies. For example, the applicant has built the necessary relationships and the regional architecture that can serve as a natural point of dissemination and scale-up throughout the southern state geo-region. This will facilitate ease of replication to new school districts and regions across the state. The model will also be shared across all secondary districts through the K12 Strong Workforce Program leadership meetings, in addition to the membership meetings of the OC (Orange County) STEM Initiative. Across the state, the model will be presented at the annual CISC (Curriculum and Instruction Steering Committee) Symposium and within the CISC Computer Science (CS) subcommittee, for which the Project Co-Director is the Regional Lead. The project findings will also be shared at the STEM Learning Ecosystem Community of Practice convening through an “E2E” (Ecosystem to Ecosystem) presentation. Finally, units of study developed by schools and a summary of key research findings will be posted on the OCDE STEM website for accessibility by any interested LEA.

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 project will examine systemic and practical deficiencies (root causes) in 16 high schools (grades 9-12 reaching approximately 32,000 students). An additional 16 high schools, selected based on Propensity Score Matching (PSM), will serve as a comparison group to be monitored on key outcome indicators over time. The applicant will use an external evaluator who will lead the impact evaluation and will review and vet the implementation data collected. In addition, the external evaluator and the internal evaluator, will lead implementation evaluation activities. Together, implementation and outcome data will provide a comprehensive understanding of the project's effectiveness in the initial set of schools and inform effective strategies for replicating the project in other settings (p. e35). For the impact analyses, the applicant will employ a longitudinal, quasi-experimental mixed methods evaluation design with a comparison group identified through propensity score matching (PSM). This design meets the What Works Clearinghouse Standards with reservations. Covariates will adhere to guidance in the PSM literature and from WWC Standards (only exogenous covariates). Potential covariates may include demographics (percentage of female, and Latinx students); experience (number of CS courses offered); and academic performance (pre-intervention math scores). Of the 54 schools identified as meeting eligibility criteria for inclusion in this project, 16 schools will be selected to receive the intervention, based upon existing relationships with OCDE and schools' willingness to participate (p. e40). These strategies clearly show how the methods of evaluation will produce evidence about the project's effectiveness.

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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 applicant's evaluation plan clearly articulates the key project components, mediators, and outcomes, as well as a measurable threshold for acceptable implementation. For example, internal and external evaluators will use an integrated monitoring system to assess school implementation through a common set of indicators compiled into an Implementation Fidelity Index. The Implementation Fidelity Index will include indicators of program adherence, quality, exposure, and responsiveness. These indicators will include teacher and school leader engagement with project components; teacher knowledge of, comfort with, and use of CT instructional strategies; school-level changes in structures/schedules; student CS identity and CT skills; and student access to, success in, and completion of CT-focused courses. Fidelity index scores will be calculated per school and these fidelity variables will serve as mediators in impact analyses. Each indicator will include benchmarks for ideal, acceptable, and unacceptable levels of implementation fidelity. Some indicator thresholds are set in this proposal. To assist in setting thresholds, Inflexion researchers will interview school leaders across the country who have successfully integrated computational thinking (CT) and have high rates of Computer Science (CS) or Information and Computer Technology (ICT) pathway participation by traditionally underrepresented student populations. Findings from how these schools built their infrastructures and learning environments, together with the treatment schools' readiness baseline will inform development of indicator thresholds for the implementation evaluation (pp. e35- e37). To measure baseline implementation and structural coherence across sites, the Drivers Best Practices Assessment will be adapted for this project. This assessment will be administered with treatment schools prior to grant Year 2, with results providing critical feedback to schools to use in setting implementation thresholds for each project component. School Leadership Teams (SLTs) will complete coherence check self-assessments to gauge progress on aligning structures to support implementation. Inflexion will use annual observations, document analyses, SLT interviews, teacher surveys, and teacher/student focus groups to assess School Leadership Teams (SLTs) understanding of intervention goals, identify facilitators and barriers affecting implementation, and to assess structural coherence (pp. e36-e37). . e36-e37).

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 applicant clearly describes the extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes. For example, the impact outcomes will primarily include the Grade 11 Smarter Balanced Summative Mathematics Assessments and the annual percentages of students participating in and completing Computer Science (CS)- Information and Computer Technology (ICT) pathway courses. Predictor variables in the impact analysis will include teacher computational thinking (CT) survey scores; the student computer science identity scale; student computational thinking tests; levels of school implementation; student demographics at both the student and school levels; student grades; and student engagement in mentoring and internship (ICT pathway) opportunities. Covariates included in the matching model that remain unbalanced after matching will be included in outcome analyses as this approach can produce accurate estimates of treatment effects regardless of Propensity Score Matching (PSM) methods. The PSM design will ensure the impact

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evaluation achieves the highest level of internal validity while also meeting the EIR Early-phase Grant requirements (pp. e41-e42).

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 central aim of this innovative project is to develop and implement equity-minded interventions to improve the career pathway and workforce trajectory for underrepresented and underserved youth across the Information, Computer Science, and Technology sector, which are in-demand emerging and priority industry sectors. The project is a strategic partnership between the Orange County Department of Education (OCDE) and Inflexion, with the goal of increasing enrollment and retention of female students and Latinx students in computer science (CS) courses, by improving computational thinking (CT) skills, developing school-wide and student-targeted CS-identity, and creating an ecosystem of supports to facilitate equity and inclusion in CS. The project will examine systemic and practical deficiencies (root causes) in 16 high schools (grades 9-12 reaching approximately 32,000 students. An additional 16 high schools, selected based on Propensity Score Matching (PSM), will serve as a comparison group to be monitored on key outcome indicators over time. The project will provide organizational supports, incorporating key systems, for computational and design thinking. Through successful iterations and refinements, this model can be generalized to be replicated across schools with similar demographics and characteristics.

Weaknesses:

None noted.

Reader's Score: 5

Status: Submitted
Last Updated: 10/22/2020 05:58 PM

Status: Submitted

Last Updated: 10/23/2020 08:50 PM

Technical Review Coversheet

Applicant: Orange County Superintendent of Schools (S411C200130)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Quality of Project Design	40	39
Sub Total	40	39
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	24
Sub Total	25	24
Priority Questions		
CPP		
Competitive Preference Priority 1		
1. Computer Science	5	5
Sub Total	5	5
Total	105	99

Technical Review Form

Panel #10 - FY20 EIR Early Phase- AP2 STEM - 10: 84.411C

Reader #2: *****

Applicant: Orange County Superintendent of Schools (S411C200130)

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: 39

Sub

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

Strengths:

Table A1 on page e18 clearly defines project goals, objectives, and outcomes in an organized manner. Objectives are written in measurable format.

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:

On page e22, applicant summarizes thesis that selection of candidate schools is based on female and Latinx underrepresentation in computer science courses and provides data in text to support need for intervention based on district demographics.

Weaknesses:

None 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 applicant clearly explains theoretical basis of inflexion approach and communities of practice as a sound intervention for professional learning and school change activities. Table A3 on page e25 provides a clear and well-defined overview of the components.

Sub

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:

Scalability and the larger contribution of the project is discussed on page e27, with the applicant noting that the goal of the project is largely focused on developing the mindset of computer science thinking rather than workforce development. This is a unique approach in that it targets the whole person, rather than the person as future employee.

Weaknesses:

A plan for dissemination of lessons learned is not clearly articulated in this section on page e28.

Reader's Score: 9

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:

Management plan on p. e30 provides a clear delineation of tasks and timelines. Planning activities in first year are well developed to provide a foundation for success.

Weaknesses:

On page e29, the section begins with "An internal team of OCDE Educational Services staff will oversee all aspects of the intervention". The budget narrative notes, however, that an external contractor will serve as the "co-director". This is an inconsistency. Language used in timeline table on page e30 contributes to lack of clarity in actual tasks being performed. For example, "Inclusive teaching practices, culturally relevant instructional practices (Retention)" does not provide the reader with the concrete activities being done and when they happen. The contribution, in terms of full-time equivalent units from the applicant organization may be insufficient to accomplish oversight of this large and complex project. Applicant is relying extensively on external contractors to provide key project functions.

Sub

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 applicant notes the project will impact over 30,000 students and 1000 teachers at 54 schools. The applicant clearly defines target population.

Weaknesses:

None noted

Reader's Score: 5

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

Strengths:

Co-Directors from Orange County Schools have a significant depth of experience with STEM and systemic change initiatives.

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:

On page e33, the applicant notes the use of a web-based satisfaction and feedback portal for use in formative evaluation. The use of school implementation plans is proposed to generate additional feedback.

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.

Strengths:

Statewide dissemination model is outlined on page e34, including leadership meetings, symposia and websites.

Weaknesses:

Plans for national dissemination to research or higher education communities were not evident on page e34.

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: 24

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:

Plan includes matching of controls for quasi experimental design with explanation of propensity matching and controls for attrition.

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:

Table on appendix p. e143 provides a clear explanation of variables included in data model.

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:

Plan includes controls for pre-existing differences and uses statistical tools to model the measured differences in dependent variables related to intervention.

Weaknesses:

On page e39, research question 1 is measured by an annual grade 11 mathematics test. Establishing a causal relationship between this broad intervention and a test of math skills might be inappropriate without significant multivariate controls.

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Reader's Score: 4

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:

Program is unique in that it seeks to make systemic change to encourage target population more inclined to enroll in and complete CS courses already offered in their high schools.

Weaknesses:

None noted

Reader's Score: 5

Status: Submitted

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Status: Submitted

Last Updated: 10/27/2020 04:54 PM

Technical Review Coversheet

Applicant: Orange County Superintendent of Schools (S411C200130)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Quality of Project Design	40	39
Sub Total	40	39
Resources and Quality of Management Plan		
Resources and Quality of Management Plan		
1. Resources and Management	35	27
Sub Total	35	27
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 #10 - FY20 EIR Early Phase- AP2 STEM - 10: 84.411C

Reader #1: *****

Applicant: Orange County Superintendent of Schools (S411C200130)

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: 39

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 clearly articulates project goals, the associated activities, and anticipated outcomes (p. e19) and proposes clear measures for each outcome (pp. e37–e38). The applicant goes a step further to clearly articulate the alignment between each goal and key elements of each component of the project (Multi tiered systems of support (MTSS), Inflexion, CS-Focused Connections).

Weaknesses:

No weaknesses 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 applicant provides clear baseline data demonstrating large disparities in CS/ICT enrollment by female and Latinx students (p. e22) and grounds its approach in existing guidance focused on improving equity in computer science (p. e23). The applicant clearly identifies key barriers for female and Latinx students from having access to CS coursework (p. e28) and how the project will address these barriers.

Weaknesses:

No weaknesses 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.

Sub

Strengths:

The applicant provides a robust summary of literature for each component of its model as part of an included appendix (pp. e129–e138). Citations are current. The applicant not only notes the relevant literature but directly connects findings from previous studies to its proposed model. Additionally, though much of the applicant’s rationale is grounded within the literature on SEL and MTSS, they provide clear justification and research demonstrating why such an approach has potential for increasing equity in CS participation (p. e24; pp. e27–e29).

Weaknesses:

No weaknesses 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 proposes a truly innovative model bridging SEL, MTSS and Computer Science to build schools’ capacity and culture to improve students’ engagement in computer science. The applicant proposes to address key, historic barriers to underrepresented groups accessing advanced coursework (pp. e28–e29).

Weaknesses:

Because the applicant’s model affords great flexibility to individual schools to adapt the intervention over time, systematizing the intervention for broad impact will pose some challenges.

Reader's Score: 9

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: 27

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 applicant provides a basic timeline of activities, noting the organization responsible for ensuring the completion of each task (p. e30), demonstrating the progression of the project over time. The applicant further provides a description of the Inflexion approach (pp. e118-e126) which includes key milestones for at least that component of the project.

Weaknesses:

The applicant’s timeline (p. e30) only provides information at the year level and does not further disaggregate the individual activities and action steps that will happen over the course of those years. Though the header of this table includes the term “Milestones” the applicant does not actually articulate what the key milestones are for each

Sub

activity. The applicant does not describe how OCDE and Inflexion, particularly in cases where both are leading activities, will delineate work and work together. The applicant does not include an organizational chart.

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 applicant provides a clear and fully justified budget and budget narrative. All costs are reasonable, including the proposed in-kind contributions in staff time.

Weaknesses:

No weaknesses noted.

Reader's Score: 5

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

Strengths:

The applicant proposes a team of highly qualified staff with ample experience managing projects of similar scope.

Weaknesses:

The applicant does not provide clear qualifications for the two to-be-hired staff (STEM Coordinator; Instructional Program Assistant) who will both be working full-time on the project and managing the day-to-day operations.

Reader's Score: 4

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

Strengths:

Continuous improvement is a core component of the applicant's proposed model with in the school; each school is tasked with completing "Plan-Do-Study-Act" cycles to refine their approaches over time. At a project level, the team will use feedback generated from their internal platform and make adjustments "when indicated" (p. e33)

Weaknesses:

The applicant does not discuss how often the team will review data or implement changes.

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 applicant largely focuses on promoting uptake of the model across California and posting findings on their website for "any interested LEA." (p. e35).

Sub

Weaknesses:

The applicant does not indicate a plan to publish evaluation findings in peer review journals, or present at any national conferences, which limits the potential reach of the project. Further the applicant does not discuss how materials will be packaged, only that “the model” will be disseminated and shared across the state.

Reader's Score: 3

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 applicant fully describes their evaluation design including providing clear model specifications (p. e143) and a power analysis (p. e145). The applicant provides basic details on their proposed propensity score matching criteria (p. e41) and includes clear specification of how they will identify appropriate matches (using a .2 Standard Deviation caliper).

Weaknesses:

Although the applicant notes they are powered to withstand 10% attrition, they do not note how they will handle missing data (e.g., case-wise deletion, imputation) or provide data supporting the 10% attrition figure (p. e145). The applicant also does not note in which software they conducted the power analysis, which is important as tools vary in their precision.

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 applicant clearly articulates each component of their model with associated measures and thresholds for implementation.

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.**

Sub

Strengths:

The applicant's main outcome, Smarter Balance Math Assessments, are generally considered valid and reliable. The applicant further provides psychometrics for key survey and other measures (p. e39). These measures will be used to construct a "Fidelity Index" and will use these scores as mediators in the impact analyses (p. e36).

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 applicant focuses on expanding access to computer science among high needs students.

Weaknesses:

No weaknesses noted.

Reader's Score: 5

Status: Submitted
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