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

Status: Submitted
Last Updated: 07/18/2019 12:09 PM

Technical Review Coversheet

Applicant: Community Unit School District 60 (U411C190169)
Reader #1: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		20	10
	Sub Total	20	10
	Total	20	10

Technical Review Form

Panel #5 - EIR Early Phase Tier 2 - 10: 84.411C

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

Applicant: Community Unit School District 60 (U411C190169)

Questions

Selection Criteria - Quality of the Project Evaluation

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

(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).

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

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

(4) 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:

1. The evaluation plan for the STEM CSED project is aligned with the Next Generation Science Standards (NGSS) as well as the International Society for Technology in Education (ISTE) Standards and the Common Core Mathematics Standards (p. e17). The proposed quasi-experimental design (p. e40) Comparative Interrupted Time Series (CITS) analysis (p. e41), if implemented well, have the potential to meet WWCS with reservations.
2. Pilot programs have produced some statistically significant preliminary results (p. e24); this provides some indication that the proposed project may provide adequate guidance for replicating the project in other settings.
3. The use of standardized test scores (NWEA MAP) (p. e43), provide valid and reliable sources for student achievement data to inform project goals and outcomes.
4. Goal and objectives of the project are clearly outlined (p. e36-37). The focus on increasing teacher's pedagogical content knowledge and measuring changes in this knowledge via pre/post-tests, course-specific pre/post-tests, surveys, interviews, and focus groups is a strength (p. e37). Key project components are adequately mapped onto most outcomes.

Weaknesses:

The extent to which baseline equivalence will be achieved and the process by which this will be achieved is unclear, particularly given number of participating students cited earlier in the proposal (p. e41). Additionally, although the evaluation plan relies on a Comparative Interrupted Time Series Analysis, very few details are provided about the points at which data will be collected, and the processes associated with the data collection and analysis (p. e41). Data regarding mean Math score performance is cited as implying that the program had statistical and significant impact, however, t-test data is not provided (p. e24). The measurable outcome of a K-12 CS Pathway with a scope and sequence for courses developed and implemented for 100% of WPS students is valuable as an outcome but does not link to achievement (p. e36). Although outcomes related to math and science are specified within the evaluation plan (p. e40) there are no research questions that focus on teacher and student knowledge of CS. The indirect measure of students' motivation is connected only to student choice, and seems to be too narrow an assessment (p.e37). Links between taking computer sciences and developing strong pedagogical content knowledge are not well-articulated (p. e33). The link

between student choice, student motivation, and student achievement is not well-articulated (p. e34). Existence of website and resources without specifics to measure access/use of said resources is insufficient (p. e37).

Reader's Score: **10**

Status: Submitted
Last Updated: 07/18/2019 12:09 PM

Status: Submitted
Last Updated: 07/17/2019 05:31 PM

Technical Review Coversheet

Applicant: Community Unit School District 60 (U411C190169)
Reader #2: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		20	7
	Sub Total	20	7
	Total	20	7

Technical Review Form

Panel #5 - EIR Early Phase Tier 2 - 10: 84.411C

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

Applicant: Community Unit School District 60 (U411C190169)

Questions

Selection Criteria - Quality of the Project Evaluation

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

   (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).

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

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

   (4) 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 proposes a comparative interrupted time series design. There is some explanation of the characteristics on which the groups will be matched and that baseline equivalence will be conducted (pg. 22). Research questions 1 and 3 are appropriate to guide evaluation of program impact. RQ 1 is clearly aligned with objective 3 on page 21. RQ 3 is broad and could possibly guide the evaluation of objectives 2, 4 and 5. Measurable outcomes for objectives 1 and 2 (pg. 20-21) are provided, and measurable outcomes and data indicators provided on pages 17-18 and 20-21 are appropriately aligned to the objectives. Multiple data collection methods and sources will be used. This would ensure data triangulation and increase the validity and reliability of the data. Data collection methods are also clearly aligned with project objectives appropriate for performance measure data, and a clear data collection timeline is provided on page 25.

Some information on how the applicant will ensure continuous feedback and conduct periodic assessment of progress toward achievement. Implementation research question 4 on page 23 will elicit outcomes to determine fidelity of implementation.

Weaknesses:

The applicant states that an interrupted time series design will be used (pg. 22). However, an explanation about the design process is unclear. While the applicant states that comparison/treatment groups will be used, it is unclear how the classrooms will be selected or assigned. A more detailed explanation of how baseline equivalency will be established and confounding factors will be accounted for would strengthen the study. Because this is an interrupted time series design, more explanation of the intervention and data collection timeline is needed to determine if the methodology is appropriate to elicit the intended outcomes. The timeline on page 25 provides some clarity on data collection points; however, it's unclear how the data collection fit into the design for each evaluation instrument listed in the table. Sample size, statistical significance, and minimum detectable effect size (MDES) is also unclear. As such, it cannot be determined if the study meets WWC standards.

Some improvements to methodology is needed. RQ 2 could be revised to better reflect objective 2, and RQ 3 could be revised to be more targeted toward objective 4 (pg. 25). The applicant includes multiple data collection methods in the tables on pages 23 and 24, including teacher pre/post-tests, surveys, and rubrics. More information about how the reliability and validity of the instruments will be determined is needed. The analysis could also use more explanation about how confounding factors would be accounted for. For example, the applicant explains that t-tests will be used to analyze teacher pre and post-test data, but there is no explanation of how they will account for differences in teacher years of experiences and quality and differences in schools. It is also unclear if t-test includes data for changes within groups, between groups, or both to determine if t-test is the appropriate method of analysis. The same is true for the analysis of NWEA MAP MATH data described on page 24. More explanation is needed on how data from the rubric will be analyzed. The applicant states that descriptive statistics will be used, but it is unclear how that analysis will elicit information to answer RQs 2, 3, and 4.

Research questions 2 and 4 on page 23 appear to elicit information to assess program fidelity and provide effective strategies suitable for replication in other settings needs improvement. However, more clarity is needed around how the actual evaluation will be carried out. The tables on pages 23 and 24 provide information on data collection methods and how they relate to the RQs and objectives; however, it is difficult to understand the process. A narrative explaining the tables would provide more clarity. No measurable threshold for acceptable implementation is provided.

Reader's Score: **7**

Status: Submitted
Last Updated: 07/17/2019 05:31 PM