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

Status: Submitted
Last Updated: 07/18/2019 11:34 AM

Technical Review Coversheet

Applicant: Computer Science Teachers Association LLC (U411C190048)
Reader #1: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		20	15
	Sub Total	20	15
	Total	20	15

Technical Review Form

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

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

Applicant: Computer Science Teachers Association LLC (U411C190048)

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. A strength of the proposed evaluation is a mixed-methods evaluation. This evaluation is comprised of a quasi-experimental approach (p. e41). Outcomes included in the quantitative analysis include percentage of ELs enrolling in AP CSP passing the class, students' percentile rank within the class based on grades, percentage taking the AP exam, the mean AP score, and the percentage scoring a 3 or better and a 4 or better on the exam. The evaluation will also study ELA grades in grade 11 (p. e42), given the potential of the intervention to support EL students' language skills. Power analysis using PowerUp! (p. e42). Minimum Detectable effect size of .18 in year one of the study will be obtained (p. e42). The proposal is further strengthened by a well-defined qualitative data collection and analysis process involving observations, interviews, and surveys, with interviews that also include student perspectives about ELs' in-class CS opportunities (p. e.41). The evaluation plan, if implemented with specific attention to the complexities of CITS, has the potential to meet What Works Clearinghouse standards with reservations.
2. A strength of the proposal is an expanded and operationalized notion of replication that emphasizes both quantity and quality of future projects (p. e42). A further strength of the project evaluation is the use of an equity audit process. By studying the shift in educator's believes and practices, and by gauging EL students' self-assessment of engagement with CS, the evaluation has the potential to inform efforts to replicate similar interventions in other settings (p. e42-e43), if these methodological strategies are combined with other rigorous methods of data collection and analysis.
3. Primary outcomes measured using transcripts and grades, and College Board test outcomes, as well as percentile rank in class to guard against variation in grading standards. These standardized measures are representative of valid and reliable measures of program outcomes.
4. The evaluation plan articulates all key project components, including professional development, the creation and facilitation of PLCs for teachers and administrators, and the development of curricular and pedagogical resources. (p. e115). An acceptable implementation threshold of 33% of teachers at a treatment school in a given year is provided. (p. e44). Analysis will use Bootstrap method (p. e44-e45), and will account for moderating variables such as students' home language, which has been shown to be a predictor of outcomes (p. e45).

Weaknesses:

The quasi-experimental design includes comparative interrupted time series analysis (CITS) with propensity score matching (p. e41); however, greater detail is required in order to assess the extent to which the evaluation plan will produce evidence of program effectiveness. These details should include the intervals at which data will be collected and analyzed in order to address the focal outcomes of the intervention.
Research questions are not clearly articulated (p. e41-e45), which greatly limits assessments of the extent to which the plan will provide guidance about replicability or testing in other settings.
Although data sources are discussed, the lack of clarity of research questions prevents a determination of the extent to which the results will yield valid and reliable results (p.e41-e45).

Reader's Score: **15**

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Technical Review Coversheet

Applicant: Computer Science Teachers Association LLC (U411C190048)
Reader #2: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		20	14
	Sub Total	20	14
	Total	20	14

Technical Review Form

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

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

Applicant: Computer Science Teachers Association LLC (U411C190048)

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 matching and how baseline equivalence will be conducted (pg. 21). The applicant provides an explanation of sample size, power analysis, and MDES (pgs. 22). It can be somewhat determined that the evaluation meets WWC standards with reservations.

Outcomes provided on (page 21) is aligned with objectives and data collection methods provided on (pages 10-11) are appropriate to address the intended goals. Multiple data collection methods and sources will be used (pg. 11, 21, 23). This would ensure data triangulation and increase the validity and reliability of the data.

Some information on how the applicant will ensure continuous feedback and conduct periodic assessment of progress toward achievement. Implementation outcomes and data collection methods are provided on (page 22). The applicant describes each data collection instrument and when data will be collected (pg. 23).

Weaknesses:

Some explanation about the design process is unclear. 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. No RQs are provided for the impact or implementation study, making it difficult to determine if the evaluation will elicit intended outcomes. While there's some mention of data analysis for the impact study on (page 24), more information is needed to determine if the analysis is appropriate for the data and methodology. For example, it is unclear how treatment and control group data will be compared nor how the data indicated on (pages 10 and 11) will be analyzed.

More information on the implementation study is needed. For example, it would strengthen the study to include RQs aligned with the data collection methods and analysis. This would help to better determine if the methodology is appropriate to elicit the data needed to measure intended objectives and outcomes.

Data analysis for the implementation study is unclear. For example, it is unclear how the components listed on (page 22 and 23) will be used to determine fidelity of implementation. The applicant mentions that class observations will be used to gauge fidelity of implementations, but does not explain the methodology or analysis to determine such. Analysis of surveys, observation, interviews and other qualitative data is unclear. Additionally, more explanation about how the variables will be analyzed using the bootstrap method (pg. 24) would strengthen the study. Given the overall weaknesses, it is difficult to determine the extent to which the evaluation will provide guidance about effective strategies suitable for replication in other settings.

Reader's Score: **14**

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