

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

Status: Submitted

Last Updated: 07/17/2019 10:39 AM

## Technical Review Coversheet

**Applicant:** San Diego Unified School District (U411C190289)

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

	Points Possible	Points Scored
<b>Questions</b>		
<b>Selection Criteria</b>		
<b>Quality of the Project Evaluation</b>		
1. Project Evaluation	20	17
<b>Sub Total</b>	20	17
<b>Total</b>	20	17

# Technical Review Form

Panel #12 - EIR Early Phase Tier 2 - 11: 84.411C

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

Applicant: San Diego Unified School District (U411C190289)

## 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 applicant proposes a cluster-randomized trial and will use baseline equivalence to adjust for variables in participant characteristics (pg. e54). Half of the targeted teachers will participate in the treatment and half in the control and the research questions are aligned to the study design. Control teachers will receive the treatment in Year 5 (pg. e51). It appears that if the methods of evaluation are implemented with fidelity, they will produce evidence that would meet the What Works Clearinghouse standards without reservation.

2. The project will develop and Implementation Guide (pg. e21) that includes information, guidance and strategies about the project. The applicant proposes that research findings will be disseminated at research conferences, in peer-reviewed research and journals, through existing computer science education networks, through a public blog, on the project website, and via social media (pg. e36). This process should provide guidance about effective strategies that would be suitable for replication or testing in other settings.

3. The sample size of the teacher study is suggested as 124, which allows for attrition and is a little more than half of the proposed treatment cluster (pg. e52). Teacher skills and confidence will be measured by validated instruments (Computational Thinking Test, Teacher Perspectives on Computational Thinking and Computing). Student assessment will be comprised of validated instruments (Computational Thinking Scale, Computational Thinking Test) which will be used as a baseline for both the treatment and control groups. The evaluators backgrounds are provided in the narrative and appendix.

4. Thresholds are set for participation by teachers (Targets, pg. e36) and students (Targets, pg. e36-37). evaluation plan clearly articulates the key project components, mediators, and outcomes. Table 3 (pg. e38) provides details of the milestones sorted by school cluster, including the number of teachers and students that will be phased in each year in a clear and descriptive table. The logic model is thorough and aligned with the goals and objectives of the program. The outcomes are detailed and described throughout the narrative (pg. e33-35, 115).

**Weaknesses:**

1. NA

2. NA

3. The applicant proposes that at the end of year 3, 244 teachers from the 20 schools in two clusters who have not participated in any of the intervention will be recruited for the impact study to allow for attrition. It's unclear how the evaluator arrived at that number for possible attrition, or what the alternate cluster amount would be should attrition not be that high (pg. e51). The treatment group does not receive the intervention (summer boot camp PD) until the beginning of Year 4 (pg. e51). The applicant states that teachers will take a self-perception survey (pg. e33, "90% of teachers teaching computer science will score 90% on a qualitative teacher self-perception survey), that students will take a student interest survey (pg. e35, "Each year 50% of participating middle school students will express an interest in studying computer science post-secondary and/or pursuing a computer science related career as measured by student interest survey"), and that the participants will take an extensive online end of year survey (pg. e29), but the surveys are never identified, so the validity of these measures cannot be checked. Based on these concerns it is not clear that the evaluation will provide valid and reliable performance data on the relevant outcomes.

4. NA

**Reader's Score:** 17

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## Technical Review Coversheet

**Applicant:** San Diego Unified School District (U411C190289)

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

	Points Possible	Points Scored
<b>Questions</b>		
<b>Selection Criteria</b>		
<b>Quality of the Project Evaluation</b>		
1. Project Evaluation	20	19
<b>Sub Total</b>	20	19
<b>Total</b>	20	19

# Technical Review Form

Panel #12 - EIR Early Phase Tier 2 - 11: 84.411C

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

Applicant: San Diego Unified School District (U411C190289)

## 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 proposed project is likely to produce evidence about the project's effectiveness that will meet the What Works Clearinghouse Evidence Standards, because the applicant plans to use a qualified external evaluator with seven years of experience in educational research (pages e45, e81-e82). The evaluation plan incorporates an experimental design and includes a plan for formative and summative evaluation (pages e46-e51). It includes a clear description random assignment of cluster schools and its plans to ensure a sufficient sample size (pages e51-e52).

The evaluation plan is likely to provide guidance about effective strategies suitable for replication or testing in other settings, because it includes a thorough plan to assess fidelity of implementation. The applicant included plans to assess each evaluation question and provided data collection activities, assessment instruments, and schedule for each. The applicant plans to identify critical components of the proposed project that can be replicated and sustained by others (pages e46-e49).

The evaluation is likely to provide valid and reliable performance data on relevant outcomes, because it is based on seven research questions that are aligned with the project's goals and logic model (pages e50-e51, e115).

The applicant plans to include a variety of outcome measures, including the Computational Thinking Test, Teacher Perspectives on Computational Thinking and Computing, and the Computer Science Attitude Survey, and the applicant plans to develop a statistically valid instrument to reliably measure the constructs of the project (pages e48-e535). These data sources will provide qualitative and quantitative information on the impact of the proposed project.

The applicant included a thorough plan for data analysis that will not only provide information on the project's impact by comparing treatment and control groups but will also contain information on its impact for specific subgroups of students (pages e53-e57). The applicant included a thorough plan for data analysis that will not only provide information on the project's impact by comparing treatment and control groups but will also help ensure that it is implemented as planned.

The plan for power analysis will help illustrate the project's impact on students and teachers (pages e53-e57). This is likely to provide important information on the project's impact that can benefit others wishing to replicate the proposed project,

**Weaknesses:**

The evaluation plan identifies The Jacobs Institute as the organization that will conduct the impact evaluation over the last two years of the grant (pages e49-e50). The applicant did not provide any information on this organization's qualifications and did not include them in the budget narrative.

The proposed project will take place in California, but it is unclear which state standards will be used in the Bootcamp curriculum (page e47).

**Reader's Score:** 19

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