

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

Status: Submitted

Last Updated: 07/19/2019 11:07 AM

Technical Review Coversheet

Applicant: Louisiana State University (U411C190287)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	20	16
Sub Total	20	16
Total	20	16

Technical Review Form

Panel #6 - EIR Early Phase Tier 2 - 12: 84.411C

Reader #1: *****

Applicant: Louisiana State University (U411C190287)

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 does a very good job of addressing the four (4) evaluation criteria. The applicant proposes a mixed methods approach to the evaluation of the project. The applicant includes a discussion on participant confidentiality and consent along with IRB approval in the front-matter of the application. The Table on pp.12-13 includes the goals and objectives of the project that align with the logic model in the appendix. The timeline on p. 17 demonstrates the integration of evaluation into the project plan that includes frequent meetings with the research team and other stakeholders. Including CQI meetings every two weeks will increase the potential for project implementation fidelity and mid-course corrections from barriers and lessons learned during project implementation. The use of the fidelity index as a mediator for the impact analysis will be helpful when considering replication to other contexts and determining dosage impact. The applicant proposes to implement the project in rural, suburban and urban settings, which should provide information for testing in different contexts and replication. The use of propensity score matching for the QED 2 should reduce validity issues with matching between the treatment and comparison groups. The applicant states that the selection and then randomization method will meet WWC standards without reservations, but since the students self-select, then the study is not truly randomized. If the study is not randomized, then it will meet WWC standards with reservations.

Weaknesses:

The first impact study states that the students will be recruited by the teachers and then randomly assigned into the treatment and comparison groups. Since the students are self-selecting into the coursework, it is unclear how selection bias will be controlled for by the research team. It is not clear how the stakeholders will be selected for the interviews (p. 22). Although parents are named as one of the stakeholder groups to be included in the continuous quality improvement cycle, there is no information on how the parents will be included or selected for inclusion in the evaluation section of the application. Maturation between treatment assessment in 9th grade in comparison to 10th grade could threaten the internal validity of the findings. There is also the likelihood of an unintended diffusion effect since the project teachers and comparison group teachers/students are from the same districts.

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Technical Review Coversheet

Applicant: Louisiana State University (U411C190287)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	20	16
Sub Total	20	16
Total	20	16

Technical Review Form

Panel #6 - EIR Early Phase Tier 2 - 12: 84.411C

Reader #2: *****

Applicant: Louisiana State University (U411C190287)

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 formative evaluation described on pages 21-22 present data collection, feedback, and analysis that will provide program managers with bi-annual evaluative findings that can be utilized to shape program implementation through communication with program implementers.
- The applicant proposes using both qualitative and quantitative data to examine program implementation and fidelity. A mixed methods (p. 21) evaluative approach is appropriate for an initial study and should serve to explicate findings.
- The computation of project implementation fidelity score (p. 23) is described as guided by the project logic model (e84) and utilizing measures for each program component. The resulting scores by school will result in a categorical variable for inclusion in the analysis of outcome variables. This methodology will result in a valid analysis of the level of implementation's effect on performance.
- The HLM analysis the applicant proposes is appropriate for the complexity of the treatment conditions contained in the proposed activities. The analysis of multiple school sites, classrooms within schools, and staggered treatment across students suggests that this approach will isolate treatment effects in students. This procedure will meet WWC with the caveats mentioned below regarding subject maturation.
- The statistical power analysis described on pp. 25-25 for a population of approximately 1,655 subjects will provide for confidence in any findings based on differences in treatment.

Weaknesses:

- The sampling methodology proposed allows the applicant to assign students to treatment randomly within schools with half of pre-engineering randomly assigned to ICT in Grade 9 and half in Grade 10 (pp. 23-24). This

approach will eliminate assignment bias but will not account for a possible confounding variable in the form of maturation effects and unintended treatment diffusion over time.

- The applicant does not provide information about how respondents for interviews (p. 22) will be selected, which students/staff will be surveyed, survey development or how the qualitative will be analyzed. The absence of this information jeopardizes the validity of the data collection and the accuracy of its integration into quantitative findings.
- An evaluation the project impact on parents (e20) is missing from the discussion of data collection and analysis although raising “the awareness of computing in parents” is included in the applicant’s abstract.

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