

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

Status: Submitted

Last Updated: 07/18/2019 11:42 AM

Technical Review Coversheet

Applicant: Old Dominion University Research Foundation (U411C190032)

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 #3 - EIR Early Phase Tier 2 - 6: 84.411C

Reader #1: *****

Applicant: Old Dominion University Research Foundation (U411C190032)

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:

Design on p.41 appears to address the characteristics of WWC design without reservations.

Analysis plan on p.46 is well defined and based in measurement theory. Design will account for pre-existing differences inherent in intact classrooms.

Design is clearly explained and will support replication.

Instrumentation is explained clearly on p.44-45.

Power analysis calculations include information needed to confirm calculations.

Weaknesses:

Teacher survey appears to be used many times on the same population. This could pose a threat to validity through familiarization or fatigue.

Instruments without established validity are not pilot tested before use.

The Virginia Department of Education is listed as an important partner for development of some of the instrumentation. There is no letter of support acknowledging their commitment to this component.

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Last Updated: 07/18/2019 11:42 AM

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Last Updated: 07/17/2019 02:06 PM

Technical Review Coversheet

Applicant: Old Dominion University Research Foundation (U411C190032)

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 #3 - EIR Early Phase Tier 2 - 6: 84.411C

Reader #2: *****

Applicant: Old Dominion University Research Foundation (U411C190032)

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 presents a satisfactory evaluation plan. The evaluation methods have a strong likelihood to produce evidence about the project's effectiveness that would meet What Works Clearinghouse standards without reservations. A randomized controlled trial impact study will be conducted to address five confirmatory research questions about teacher and student computer science knowledge (pg. 20). Randomization will occur at the teacher level; the teacher sample size is sufficient (n = 220) as is the power analysis (pgs. 21-22). The applicant provides a reasonable explanation as to the expectation for low attrition (pg. 24).

The applicant intends to assess acceptable program implementation through the completion of project components including web-assisted professional development, microcredential attainment, and development of lessons and resources (pg. 26). Various data will be collected such as those from professional development observations, attendance, and participant interviews. Some of the student assessments, such as the Computing Attitudes Survey, are well-established and should provide solid performance data to inform the evaluation (pg. 24). The key project components and activities are sufficiently described and are satisfactorily linked to anticipated outcomes. For example, through the use of field-tested instructional materials, one project goal is to increase students' affective and cognitive readiness in pursuing STEM and computer science coursework (pgs. 12-14). The mediators are lengthy but suitably described.

Weaknesses:

Areas of concern were seen with a few of the described assessments. The state computer science performance assessments for students were still in development by the state department of education (pg. 24); therefore, reliability and validity have not been established. Also, the applicant does not indicate if interrater reliability (for scoring with the rubric) would be measured prior to initial administration, which could impact relevant outcomes, as could participant teachers scoring their own students' assessments. Another concern was the dosage of the teacher survey. Participants would be administered a full-length computer science survey four times annually and a modified computer science survey three times which could lead to test-retest bias and fatigue.

Additionally, the evaluation plan is vague on details for measuring fidelity of implementation. The applicant reports that program adherence, dosage, quality, and participant responsiveness will be used but does not specify a measurable threshold for acceptable implementation (pg. 26).

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