

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

Status: Submitted

Last Updated: 09/03/2018 12:04 AM

Technical Review Coversheet

Applicant: Knox County Schools (U411C180052)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	20	12
Total	20	12

Technical Review Form

Panel #8 - Early Phase Tier 2 - 8: 84.411C

Reader #1: *****

Applicant: Knox County Schools (U411C180052)

Questions

Selection Criteria - Quality of the Project Evaluation

1. In determining the quality of the project evaluation to be conducted, 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 the NIA).
- (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 application provides various options to use to identify the matched sample for the QED analysis (propensity score matching, Euclidean distance matching, Mahalanobis distance matching, p. 22 of narrative). The proposal to test these different methods to determine the best method to create a robust matched sample will help to establish baseline equivalency and lead to solid evidence about the project's effectiveness.
- 2) The study sample includes 570 students from 10 schools, which is a robust sample that will produce moderate evidence of effectiveness of the program, according to WWC standards.
- 3) The evaluation plan proposes to use the TNReady assessment to measure performance data, which has been used at the state level before. The use of an already implemented and standardized instrument ensures that the instrument has been tested for validity and reliability, therefore bolstering the use of this instrument in the evaluation for this project.

Weaknesses:

- 1) There is no discussion on how this aspect of the evaluation will guide replication or testing in other settings. There is brief mention (p. 24 of narrative) that reporting and collaboration will inform replication and scale-up, but there is no specific information offered. The rest of this section talks about the previous experience of the outside evaluator.
- 2) There is no mention of how the STEM knowledge and STEM Institute Competencies instruments are valid nor reliable. Any information regarding testing for these measures was not included. Since the validity and reliability of these instruments are unknown, it is not clear the extent to which the evaluation in general will provide valid and reliable performance data on the relevant outcomes.
- 3) The end of the narrative provides a paragraph on key components, mediators, outcome and implementation thresholds. Despite the beneficial inclusion of a fidelity of implementation matrix, details regarding implementation thresholds was not provided. It is unclear what the evaluators would determine to be acceptable implementation.
- 4) The proposal has not yet identified the measures that will be used to establish baseline equivalency. It is unclear if the matched sample will include all the important covariates to establish equivalency without understanding what will be included. Additionally, the application does not discuss attrition or how the evaluation will correct for attrition bias in the final analysis.

Reader's Score: 12

Status: Submitted

Last Updated: 09/03/2018 12:04 AM

Status: Submitted

Last Updated: 09/04/2018 11:27 AM

Technical Review Coversheet

Applicant: Knox County Schools (U411C180052)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	20	13
Total	20	13

Technical Review Form

Panel #8 - Early Phase Tier 2 - 8: 84.411C

Reader #2: *****

Applicant: Knox County Schools (U411C180052)

Questions

Selection Criteria - Quality of the Project Evaluation

1. In determining the quality of the project evaluation to be conducted, 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 the NIA).
- (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 research design is quasi-experimental with a comparison condition. Baseline equivalents are addressed using propensity scores or other matching strategies. The sample is defined and is large enough to produce evidence about the project's effectiveness that may be generalizable. The use of the TNReady state assessment provides standardized test alignment with Tennessee's college and career ready state standards, which will provide valid and reliable performance data. The methodical strategies are clear and may be replicated in other settings. The outcomes, goals and objectives are clearly provided with measurable thresholds for implementation. The project components, mediators and outcomes are well articulated in the design, which is eligible to meet WWC standards with reservations.

Weaknesses:

While the sample is sufficient for the analysis, possible attrition and how it will be handled is not addressed. Performance thresholds are also unrealistic. This is evidenced in Goal 2, Outcome 2, which calls for 100% of students to work in groups and a TED talk project detailing a real world STEM application. Additionally Goal 3, Outcome 2 calls for 100% of students attending the entire STEM institute to show steady state or growth in their competency scores from one year to the next. Setting the threshold at 100% does not take into account performance variation among students.

The Stem Institute is clearly described for 3rd – 5th grade students. However, Goal 2, Outcome 3 states at least 50% of student participants entering high school will pursue STEM related fields of study, which is 285 out of 570. The 285 out of 570 is misleading because only about 100 students will enter high school during the grant period. Additionally, to meet moderate level of evidence, the applicant may want to consider including additional school districts.

Reader's Score: 13

Status: Submitted
Last Updated: 09/04/2018 11:27 AM