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

Technical Review Coversheet

Applicant: National Math and Science Initiative (U411C180020)
Reader #2: **********

		Points Possible	**Points Scored**
Questions			
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		20	17
	Total	20	17

Technical Review Form

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

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

Applicant: National Math and Science Initiative (U411C180020)

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:

   NMSI proposes a comparative interrupted time series (CITS) design that is quasi-experimental with a comparison condition. A clear rationale for power is provided and results appear to be generalizable. The research design and goals are clear with a detailed statistical analysis plan provided in appendix H. Base line equivalents between the treatment and comparison group will be determined through the use of propensity scores. Mediators and moderators are clearly described within a two-level and three-level HLM framework. Key performance indicators and how they are to be measured are provided. The AP qualifying scores are also to be used as an indicator of success and will provide valid and reliable performance data. The application provides sufficient details around the goals, objectives, outcomes and implementation for possible replication and testing in other settings. The research design as described is eligible to meet the WWC standards with reservations.

   Weaknesses:

   There is no mention of attrition within the research design. For example, it is unclear as to how data for students that drop out or move to another school during mid-year is handled. Some targets are presented; however, many times numbers and percentage are indicative of descriptive statistics as opposed to measurable thresholds for objectives. For example, no measurable threshold was provided for AP score improvement.

   Reader's Score: 17

Status: Submitted
Last Updated: 09/04/2018 11:24 AM

Technical Review Coversheet

Applicant: National Math and Science Initiative (U411C180020)
Reader #1:   **********

	Points Possible	**Points Scored**
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	20	17
Total	20	17

Technical Review Form

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

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

Applicant: National Math and Science Initiative (U411C180020)

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)   Inclusion of a statistical analysis plan (Appendix H11) provides detailed information about the ways in which the data will be analyzed. Within this, the explanation of how to identify treatment and control schools using propensity score matching, including weighting and stratification, is an acceptable approach to establish baseline equivalency between groups. By asserting that the propensity score analysis will either result in matched schools or lead to weights to apply to the analysis, it is clear that the proposal makes a strong effort to ensure baseline equivalency, thus strengthening the evidence regarding effectiveness.

   2)   The power analysis for student participation and outcomes leads to acceptable minimum detectable effect sizes (MDES), taking into consideration the intraclass correlation of a multilevel model. This further strengthens the potential to produce solid evidence about the effectiveness of the program on key outcomes.

   3)   Using related fidelity indicators that have already been developed and field-tested (p. 24 of narrative) increases the validity and reliability of the collected data on the key outcomes and will provide additional guidance on strategies for replication.

   Weaknesses:

   1)   In the discussion on moderators at the end of the narrative, the application mentions that student-level variables, school background characteristics, and student and teacher surveys will be used to determine mediators. However, there is no mention of the teachers as potential mediators in terms of the fidelity with which they follow through on the CRP. There is also the potential for teachers to be covariates in terms of pedagogy, teacher personalities, experience, etc., yet this is not mentioned.

   2)   The application proposes to use an existing implementation fidelity matrix to link key components to implementation thresholds (p. 24 of narrative), yet the application does not provide this matrix for examination, nor does it identify the thresholds for acceptable implementation. It is unclear how the proposal will establish what is deemed acceptable or not.

Reader's Score: **17**

Status: Submitted
Last Updated: 09/02/2018 11:58 PM