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

Technical Review Coversheet

Applicant: WPI (U411B190024)
Reader #1:   **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	15	13
Quality of Project Design		
1. Project Design	25	20
Strategy to Scale		
1. Strategy to Scale	20	18
Adequacy of Resources/Quality of Management Plan		
1. Resources/Management Plan	20	17
Quality of the Project Evaluation		
1. Project Evaluation	20	0
Sub Total	100	68
Total	100	68

Technical Review Form

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

Applicant: WPI (U411B190024)

Questions

Selection Criteria - Significance

1. **The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:**

   (1) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.

   (2) The extent to which the applicant demonstrates there is unmet demand for the process, product, strategy, or practice that will enable the applicant to reach the level of scale that is proposed in the application.

   Strengths:

   This applicant proposes to increase the understanding of the use and effectiveness of online homework assignments by implementing an online program that by provides immediate feedback to middle school students (e20, e22). The feedback to the students is also provide to the teacher each day (e22). The project involves training teachers on effective strategies for using online homework programs which will increase their knowledge of the effective use of real time data when implementing online homework programs. This has the potential to allow teachers to align their daily instruction with the results of the data from the homework so that the teacher can address misconceptions before moving on to other concepts that rely on the foundation of previous instruction and thereby increase student achievement.
   No other program exists (e16) that addresses the unmet demand for online help for students when completing homework by providing immediate feedback. This is significant since the program is designed for middle school students whose parents may not be able to help with homework due to the increased rigor of the mathematics concepts in middle school. This project also addresses the unmet demand for data related to homework to provide guidance for teachers when planning instruction. Additionally, the applicant states that 30-40 teachers per week request an application (e23) which indicates a demand for the product.

   Weaknesses:

   As with any online homework program, there is no guarantee that the students will complete the assignments or that the student is doing their own work. The proposal would be stronger if evidence of the number of teachers requesting applications per week was provided.

Reader's Score: 13

Selection Criteria - Quality of Project Design

1. **The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:**

   (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

(2) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

Strengths:

The project has four major objectives and provides corresponding activities, outcomes, and measures to address each objective (e23-25). The project will collect data on the participation rate and attrition rate. This data will be calculated according to the What Works Clearinghouse standards (e24). Therefore, the goals, objectives, and outcomes of the project are clearly specified and measurable. The data from the homework allows teachers to revise their daily instruction to meet whole group or individual student needs (e30). This individualization on portions of the homework has the potential to positively affect students' interest in mathematics as well as their mathematical achievement.

The project is building on past successful projects based on a strong theoretical and research-based foundation including six theoretical rationales, which are outlined in the logic model (e25). The project includes online training for the teachers and virtual professional learning communities (e25) that have the potential to provide ongoing support and suggestions for effective instructional strategies for participants. As the project progresses, the data collected from several sources (e136-137) will be used to refine the materials and procedures of the program and therefore has the potential to provide highly individualized programs for each of the schools involved in the project.

Collaborator Teachers will be hired to create Instructional Recommendations for teachers to follow if they find their students did poorly on a problem or had a particular misconception (e131, e34). The Instructional Recommendations will provide additional support for teachers concerning errors the students make individually or as a group by suggesting strategies to address the errors. This supports the conceptual framework of using homework data to inform instructional decisions (e25).

Focus groups of teachers will be able to provide suggestion to the applicant concerning revisions to improve both the content of the data collected and the interface of the program (e131).   This supports objective 1 of ongoing improvement sustained by interviews with the focus-group teachers (e23).

Weaknesses:

While automatic daily summaries of the students' answers to the homework problems are provided each morning, it is not clear what time each day these will be available. Most middle school teachers teach mathematics all day to five or six different classes that may have different results from the homework. Reviewing the data from each class prior to the start of the first class meeting may present a problem due to time. Also not discussed in the application is the possibility that students may grow weary of homework every day as suggested (e110). The inability to view homework data prior to the first class of the day may interfere with the use of homework data to inform instruction as stated in the conceptual framework.

While the outcomes, implementations, measures, data collection schedule, and timeline for data collection are described (e136-137), the H.11 does not include specifics and seems to confuse outcomes and measures. For example, school characteristics is under the measures column yet no instrument is noted to measure school characteristics.

Reader's Score: 20

Selection Criteria - Strategy to Scale

1. **The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

   (1) The extent to which the applicant identifies a specific strategy or strategies that address a

particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

(2) The extent to which the proposed project will increase efficiency in the use of time, staff, money, or other resources in order to improve results and increase productivity.

Strengths:

The applicant listed three barriers to past projects and their response to the barriers (e30). One barrier is the need for the program to be easy to use. The applicant addressed this barrier by creating an intuitive interface to end the need for face-to-face training and to minimize time for initial setup and daily (e31). A second barrier is the accessibility to professional learning opportunities around using data to inform instruction. This barrier was addressed by creating virtual PLC's to share strategies and ideas. The PLC's will also provide a platform where teachers can analyze their own teaching practice and share best practices and suggestions concerning formative assessments with the support of other teachers using the same program and possibly facing the same issues of implementation. This will be done without the need for travel or availability at constrained times (e31-32). The third barrier is the need for support in deciding on instructional next steps with respect to the data. The applicant addressed this by providing automated Instructional Recommendations, based on analyses of their own students' data, that save time in determining next steps to address students' errors and misconceptions. The Instructional Recommendations are written by teacher participants so the recommendations are aligned with each school's recommended instructional strategies (e33, e131). Instructional support should be job embedded, and the Instructional Recommendations are embedded in the program and align instruction with homework results. The applicant's responses to past barriers are designed to allow the applicant to reach the scale that is proposed in the application.

This project will serve approximately 24,000 students and 240 teachers across 80 schools (e16). The online format of the project has the potential to increase efficacy in terms of time, money, and staff by eliminating travel expenses and time for trainers and participants as well as eliminating the need for substitutes for trainings held during the school year. Additionally, the program improved the platform to make the process of learning to use the program more efficient (e34). The use of online PLCs will allow teachers to share ideas efficiently rather than arranging meetings at convenient times and places involving travel expenses and time. The project also will involve free open source
Materials: EngageNY, Illustrative Mathematics, and Common Core State Standards. Having these free sources available indicates an efficient use of money.

Weaknesses:

It is not clear if the times and dates of the PLC meetings are determined by the teachers, the administration, or the applicant. It also is not clear if all participants are required to participate in the PLC meetings or if the teachers are required to participant in all PLC meetings scheduled. The implementation of the PLC and the willingness of teachers to participate may depend on the structure of the PLC and the attendance requirements. This may affect the effectiveness of the PLC in addressing the second barrier, the accessibility to professional learning opportunities around using data to inform instruction.

Reader's Score: 18

Selection Criteria - Adequacy of Resources/Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

   (1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

(2) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.

(3) The potential for continued support of the project after Federal funding ends, including, as appropriate, the demonstrated commitment of appropriate entities to such support.

(4) The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

Strengths:

The management team's descriptions of qualifications and percentage of FTE are described in detail (e38-39). Resumes of the management team are provided (e60-83). The responsibilities of project personnel are explained even further, and project teachers' roles and responsibilities are described (e129-131). The responsibilities, timelines, and milestones for accomplishing project tasks are clearly defined. The budget justification and summary (e156-165)
includes descriptions of teacher stipends (e153, e156-65) and all other aspects of the costs of the project. The costs are reasonable in relation to the objectives, design, and potential significance of the proposed project. The project management team and teacher leaders involved are very capable of bringing the project to fruition on time and within budget. The applicant will work with two partners who have pledged substantial financial support. Letters of support and MoUs from 18 schools in 9 states are provided (e84-102) indicating that the school partners will provide materials, time, and space for the project to be implemented. The school districts will receive the online program including the Instructional Recommendations free of charge. Addressing the barriers and acquiring funding through partners increases the potential that the project will be able to bring the proposed project to scale on a national or regional level during the grant period. The applicant provided a formula for cost effectiveness (e138) enabling the participants to determine the cost of the program beyond the grant period.

Weaknesses:

Schools and districts will be required to purchase the opportunity to be a part of the Virtual-PLCs. The cost of this is not clearly stated. Also, all students may not have computers at home to access the online homework program. The applicant did not address this possibility.

Exhibit H.2.b provides an outline of typical homework for a week (e110). Some components are assigned every night while other components are assigned either 1 night a week or 3-4 nights per week. The applicant did not address the possibility that students may become weary of online homework every night and fail to participate fully or even at all. This may affect whether the implementation of the program can be done with fidelity.

The plan for continue support of the project is based on districts purchasing the program after the grant period. The cost of continuing the program after the grant period may be prohibitive for schools.

Reader's Score: 17

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 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:

 N/A

 Weaknesses:

 N/A

 Reader's Score: 0

Status: Submitted
Last Updated: 05/16/2019 02:32 PM

Technical Review Coversheet

Applicant: WPI (U411B190024)
Reader #2: **********

	Points Possible	**Points Scored**
Questions		
Selection Criteria		
Significance		
1. Significance	15	12
Quality of Project Design		
1. Project Design	25	16
Strategy to Scale		
1. Strategy to Scale	20	19
Adequacy of Resources/Quality of Management Plan		
1. Resources/Management Plan	20	17
Quality of the Project Evaluation		
1. Project Evaluation	20	0
Sub Total	100	64
Total	100	64

Technical Review Form

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

Applicant: WPI (U411B190024)

Questions

Selection Criteria - Significance

1. **The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:**

    (1) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.

    (2) The extent to which the applicant demonstrates there is unmet demand for the process, product, strategy, or practice that will enable the applicant to reach the level of scale that is proposed in the application.

    Strengths:

    The applicant identifies the contribution that this project will make with respect to a previously studied program when it is refined and implemented in a variety of settings. (p. e19) The effectiveness of ASSISTments on mathematics achievement is established by findings that "students scoring below the median on the prior year's state math tests gained the equivalent of more than two years' worth of knowledge" in one year. (p. e20-e21)

    Cited NAEP findings indicate the need for improvement in math achievement. (p. e21)

    The positive relationship between homework and math achievement is shared through citations of multiple studies. (p. e21) Based on the positive effects of homework, this project proposes to "optimize the benefit of technology" to improve and enhance the value of homework through immediate feedback to students (p e22) as well as providing assessment information to teachers. Results of this project will increase the understanding of the possibilities for technology with respect to math homework and achievement.

    The unmet demand for this technology is evident because the applicant has "30-40 teachers per week requesting an ASSISTments account." (p. e23)

    Weaknesses:

    The applicant has not established the relationship between improved achievement in STEM and higher achievement in math. Better math knowledge and skills does not necessarily create better STEM outcomes Without this connection, the contribution of this project to increased knowledge of effective strategies for improving STEM outcomes is extremely limited.

Reader's Score: 12

Selection Criteria - Quality of Project Design

1. **The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:**

(1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

(2) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

Strengths:

The components creating the conceptual framework, such as "Spaced Learning" (p. e27) are individually supported by research results. Most of the information provided indicates that implementation of these components makes sense in current classrooms. (p. e26-e27)

This project involves the improvement and expansion of ASSISTments which has already been identified as "particularly promising" (p. e22-e23), so quality of the framework can be assumed.

The Logic Model (p. e25) accompanied with Exhibit H.2.b assists with an understanding of how the aspects of the project model address the conceptual framework components over a week period. (p. e110)

Weaknesses:

Goals are not clearly measurable or specified. For example, 4.1 (p. e25) states, in column 1, activities related to "Objective 4. Disseminate findings and support the infrastructure." The middle column states the outcome: "Increased awareness . . .". The far right column has the measurement tool to be used, which in this case is "Number of presentations at conferences, webinars, and publications." A measurable goal would indicate the number of presentations, webinars, and/or publications that the applicant intends to complete. The applicant has shared what the project will do to meet objectives but hasn't indicated the levels desired.

Research citations for mastery-based learning (p. e26) are from years where technology may not have been used as a format for determining mastery of content. While mastery learning currently has positive effects, the information doesn't indicate if these effects are consistent when mastery-based learning is implemented with technology.

The Logic Model (p. e25 and p. e110) and Exhibit H.2.b (p. e110) add "Tutoring Systems for Homework" as a feature that is not included on pages e26 and e27 as part of the conceptual framework components. Though the connotation of the feature's title creates a vision for positive outcomes, the applicant didn't provide the same research basis for this component as was given for the other five.

Reader's Score: 16

Selection Criteria - Strategy to Scale

1. **The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

   (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

   (2) The extent to which the proposed project will increase efficiency in the use of time, staff, money, or other resources in order to improve results and increase productivity.

Strengths:

The applicant identifies "ease of use of ASSISTments" (p. e30) as one of the barriers to scaling the program. Page e31 provides a summary of the reasons for the issue. The barrier will be addressed through modifications and improvements designed to "improve user experience for teachers and students". This barrier included the need for "a full day of in-person training to get started using the on-line tool" (p. e31) which will be overcome through the improvements to create "intuitive interfaces" eliminating the need for the lengthy training.

Based on the need for continued support for implementation and instructional improvement, "accessibility to professional learning opportunities" (p. e30) will be addressed through teacher participation in virtual PLCs. The creation of "a robust set of sessions that move from training to support" is part of the project. Once this strategy has been developed, the benefits of PLCs can be provided without participants having to be on-site with others using ASSISTments without geographical limits.

Efficiency of time is improved through both the use of virtual PLCs, which eliminate the need for travel, while there is a fiscal impact because of the lack of associated travel costs. Time is also affected by the development of Instructional Recommendations which will "help teachers quickly respond to the data they receive" regarding student understanding and skill. The collection of data and provision of data through the software creates efficiency, but the added benefit of the provision of interventions and instructional strategies based on the student data saves time for the teacher.

The instructional recommendations will be based on homework assigned through free, CCSS aligned software. This increases the availability of ASSISTments because no textbook purchase is required in order for the program to be used.

Weaknesses:

Concern about the ability of the project to reach the proposed level of scale is created through the school/teacher letters of support. These prospective participants state they are "committed to consider participating" (p. e85-e102) Consideration of participation means there is the possibility that the prospect will choose not to participate. This concern may be heightened because of the training required for the use of the software. Participants may choose not to participate because of the training or the difficulty with using the software.

Reader's Score: 19

Selection Criteria - Adequacy of Resources/Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

   (1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

   (2) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.

   (3) The potential for continued support of the project after Federal funding ends, including, as appropriate, the demonstrated commitment of appropriate entities to such support.

   (4) The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

Strengths:

Exhibit 8, page e37, summarizes in a chart the milestones to be accomplished and when along with the responsible person. This information is enhanced through H.7: Project Personnel and Teachers. (p. e129) In this section, the management plan is further developed by connecting the responsibilities of key personnel with their areas of expertise and FTE toward the project.

Teacher roles and responsibilities are shown in Exhibit H.7.b: Project Teacher Roles (p.e131) This information improves the management plan because teachers have a better understanding of what participation in the project requires of them.

The identified project personnel have the knowledge and experience to be able to successfully complete their responsibilities. (p. e129 - e131) Resumes on pages e60-e83 provide further detail about previous successes for each of these staff members.

H.13: Cost and Cost-Effectiveness Analysis Plan (p. e138) present a formula to calculate the "cost-effectiveness ratio" for this intervention. Once the data has been collected, analyzed, and used in this formula, an accurate cost-benefit description will result so that reasonableness of the cost of implementation can be ascertained.

Weaknesses:

Evidence of continued support and commitment is unclear. Personnel will be required for aspects such as leading the virtual PLCs, but information about how these activities will continue is insufficient. Page e39 discusses continued support financial support, but "schools and districts will purchase the opportunity to be a part of a Virtual-PLC while using ASSISTments and the Instructional Recommendations free of charge." Based on this information, an understanding of whether or not districts could actually afford to continue participation isn't created. "Minimal cost to districts" isn't adequate. (p. e40)

No approximate cost per student is listed. Whether or not the cost-benefit might be reasonable must be assumed at this point.

Reader's Score: 17

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 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:

N/A

Weaknesses:

N/A

Reader's Score: 0

Status: Submitted
Last Updated: 05/20/2019 10:22 AM

Technical Review Coversheet

Applicant: WPI (U411B190024)
Reader #3:   **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Significance			
1. Significance		15	0
Quality of Project Design			
1. Project Design		25	0
Strategy to Scale			
1. Strategy to Scale		20	0
Adequacy of Resources/Quality of Management Plan			
1. Resources/Management Plan		20	0
Quality of the Project Evaluation			
1. Project Evaluation		20	17
	Sub Total	100	17
	Total	100	17

Technical Review Form

Panel #3 - EIR Mid Phase - 3: 84.411B

Reader #3:   * * * * * * * * *

Applicant: WPI (U411B190024)

Questions

Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

   (1) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.

   (2) The extent to which the applicant demonstrates there is unmet demand for the process, product, strategy, or practice that will enable the applicant to reach the level of scale that is proposed in the application.

   Strengths:

   NA

   Weaknesses:

   NA

Reader's Score: 0

Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

   (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

   (2) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

   Strengths:

   NA

   Weaknesses:

   NA

Reader's Score: 0

Selection Criteria - Strategy to Scale

1. **The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

   (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

   (2) The extent to which the proposed project will increase efficiency in the use of time, staff, money, or other resources in order to improve results and increase productivity.

   Strengths:

   NA

   Weaknesses:

   NA

Reader's Score: 0

Selection Criteria - Adequacy of Resources/Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

   (1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

   (2) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.

   (3) The potential for continued support of the project after Federal funding ends, including, as appropriate, the demonstrated commitment of appropriate entities to such support.

   (4) The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

   Strengths:

   NA

   Weaknesses:

   NA

Reader's Score: 0

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 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 evaluation includes a detailed plan for a randomized controlled trial that should produce strong evidence of impact on student achievement (p. e41) if implemented as outlined. The design addresses power (p. e132), attrition (p. e135) and the randomization process (p. e43) which should meet the requirements for the What Works Clearinghouse without reservations if implemented as planned. The data collected for the impact study, including the student outcomes (p. e46) and the classroom outcomes (p. e46-47) and the implementation data collection tools (p. e47) would provide sufficient evidence. The implementation plan outlined in the evaluation (p. e44 & e134) will fully address teacher and administrative activities and provide information on the differential impact of student characteristics (p. e44) which will produce use information for program planning and future replication. The evaluation notes that implementation thresholds will be identified based on previous studies and on future data collection (p. e48) which would produce useful information for program staff and for future testing in other settings. The plan also includes sufficient consideration and analysis of mediators and moderators (p. e132).

   Weaknesses:

   The evaluation notes that agreement will be obtained from potential participating schools for student level data for the summative evaluation (p. e46) but it is unclear what the plan is to develop data sharing agreements with districts or how they will ensure participation. This calls into question how the project will produce a sufficient sample to meet the requirements for the What Works Clearinghouse without reservations. While the validity of the state assessments being used can be assumed the project does not provide sufficient psychometric information related to the Mathematics Readiness Test or the Teacher Survey of Instructional Practice (p. e139). Insufficient information is provided regarding the process for combining scores across states as there can be concerns related to how the domains of the assessments match (p. e44).

   Reader's Score: 17

Status: Submitted
Last Updated: 05/15/2019 12:39 PM

Technical Review Coversheet

Applicant: WPI (U411B190024)
Reader #4:   **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	15	0
Quality of Project Design		
1. Project Design	25	0
Strategy to Scale		
1. Strategy to Scale	20	0
Adequacy of Resources/Quality of Management Plan		
1. Resources/Management Plan	20	0
Quality of the Project Evaluation		
1. Project Evaluation	20	17
Sub Total	100	17
Total	100	17

Technical Review Form

Panel #3 - EIR Mid Phase - 3: 84.411B

Reader #4:   * * * * * * * * * *

Applicant: WPI (U411B190024)

Questions

Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

   (1) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.

   (2) The extent to which the applicant demonstrates there is unmet demand for the process, product, strategy, or practice that will enable the applicant to reach the level of scale that is proposed in the application.

   Strengths:

   NA

   Weaknesses:

   NA

Reader's Score: 0

Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

   (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

   (2) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

   Strengths:

   NA

   Weaknesses:

   NA

Reader's Score: 0

Selection Criteria - Strategy to Scale

1. **The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

    (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

    (2) The extent to which the proposed project will increase efficiency in the use of time, staff, money, or other resources in order to improve results and increase productivity.

    Strengths:

    NA

    Weaknesses:

    NA

Reader's Score: 0

Selection Criteria - Adequacy of Resources/Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

    (1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

    (2) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.

    (3) The potential for continued support of the project after Federal funding ends, including, as appropriate, the demonstrated commitment of appropriate entities to such support.

    (4) The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

    Strengths:

    NA

    Weaknesses:

    NA

Reader's Score: 0

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 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 proposes a clustered randomized controlled experiment where teachers are randomly assigned into intervention and control groups. Attrition will be tracked at both the school and student level. Past research on this intervention has been characterized by low attrition rates which are expected to be repeated in the currently proposed study. If conducted appropriately this study should be able to qualify to meet WWC standards without reservations.

   The evaluation will assess differential results by school and student characteristics. This will assist other settings in determining the likelihood of a good fit between this intervention and the alternate setting. The study will also perform a cost-effectiveness assessment to assist new settings in estimating the cost-benefit of adopting this intervention.

   Student math achievement will be assessed by 7th grade statewide math assessments from various states. Scores will be transformed into z-scores and combined across states. Statewide assessments are typically quality instruments with demonstrable reliability and validity.
   Potential problems caused by combining scores from different states is somewhat mitigated by the use of a supplemental assessment (MRT).

   Key components are well described in the application. Likely mediators are presented and these will be statistically analyzed. Minimally accepted thresholds of compliance have been defined and these thresholds are appropriate and clear. Outcomes are presented in Exhibit1.

   Weaknesses:

   Combining scores across state assessments is appropriate if and only if the various tests are essentially equivalent. If content and domains differ markedly this is not appropriate and can produce accurate but misleading results. Insufficient information is provided to determine if this combining of scores is problematic.

   The reliability and validity of the MRT math instrument are not presented. The SEC survey which assesses teachers has acceptable reliability but validity data are not presented.
   While the outcomes are reasonable and appropriate (Section D4), they need to be defined with greater explicit measurability.

Reader's Score: 17

Status: Submitted
Last Updated: 05/15/2019 11:11 AM

Technical Review Coversheet

Applicant: WPI (U411B190024)

Reader #5: **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	15	12
Quality of Project Design		
1. Project Design	25	16
Strategy to Scale		
1. Strategy to Scale	20	20
Adequacy of Resources/Quality of Management Plan		
1. Resources/Management Plan	20	18
Quality of the Project Evaluation		
1. Project Evaluation	20	0
Sub Total	100	66
Total	100	66

Technical Review Form

Reader #5:   * * * * * * * * * *

Applicant: WPI (U411B190024)

Questions

Selection Criteria - Significance

1. **The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:**

   (1) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.

   (2) The extent to which the applicant demonstrates there is unmet demand for the process, product, strategy, or practice that will enable the applicant to reach the level of scale that is proposed in the application.

   Strengths:

   The potential contribution of the proposed project to increase knowledge related to effective strategies is likely. The applicant is promising a project where the focus is on providing students with on-demand homework assistance via a computer, and providing the teachers with formative data based on the students' homework results. Those outside of the education field have been using data to make iterative changes to improve outcomes for decades. Teachers must have a user-friendly system, where the data are displayed in a manner in which they can make quick instructional changes. The applicant's project is designed to be user-friendly for teachers. Teachers will be able to collaborate with other teachers. The teachers will have virtual training around the proper use of the system. Finally, the applicant's project intervention focusing on math, has already shown success, the applicant support this claim with research findings, more specifically, the statistical effect sizes. As noted by the applicant, the applicant gets 30-40 requests per week from teachers requesting an account for access to the database system. This demonstrates an unmet demand.

   Weaknesses:

   The applicant's project would have been strengthened if there was some STEM discussion in the narrative. Although, math is a component of STEM, focusing solely on math alone and not in an integrated manner, negates the opportunity to show students how math is used in a practical setting. Without an integrated STEM focus, this will limit the knowledge that could be gained related to how a focus on math beyond the traditional approaches could impact learning outcomes.

Reader's Score: 12

Selection Criteria - Quality of Project Design

1. **The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:**

   (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

   (2) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

Strengths:

The applicant provided objectives, and outcomes, page e23. The objectives are directly related to the activities for the project. The applicant's conceptual framework is grounded in research (e25). The applicant provided a thorough discussion related to the theoretical rationale for the conceptual framework in relationship to the activities/strategies associated with this proposed project. All aspects of the conceptual framework were grounded in peer-reviewed research.

Weaknesses:

The applicant did not provide goals, objectives which are clearly specified and measurable. First, there were no goals provided (e23). Secondly, the outcomes were not clearly specified and measurable. For example, Objective 1, Activity 1.2 is related to "Increases in teacher retention and adoption of....." (page, e23). As written, this outcome cannot be objectively evaluated to determine if it was met. Finally, it was not clear between outcomes versus measures. As related to the statement just presented, this was under the measure column and not the outcome column. It is not clear how this is a measure, a measure is a reliable instrument to measure an outcome.

Reader's Score: 16

Selection Criteria - Strategy to Scale

1. **The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

   (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

   (2) The extent to which the proposed project will increase efficiency in the use of time, staff, money, or other resources in order to improve results and increase productivity.

   Strengths:

The applicant clearly identified the barrier which is preventing scale. If teachers do not have the training, and see no real value in a tool, they will not use the tool (page, e30). The applicant thoroughly identified three strategies to overcome the barrier. All of the strategies are reasonable and should address the barrier if these strategies are implemented with fidelity. For instance, related to training, the strategy is to offer a Professional Learning Community virtually (page, e31). The project should increase efficiency in the use of time, staff and money. In improving the user's experience, the applicant will use focus groups, and usability studies. Based on the data and analyses from the focus groups and usability studies, there will be iterative design changes to the product, hence, improving the user's experience. Another barrier was travel time, and this will be addressed by incorporating virtual-professional learning communities. The strategies related to overcoming the barriers, are directly related to an increase in efficiency for this applicant's project. If teachers are more inclined to use the services based on improved user's experience, this inherently increases the efficiency in the use of their time. If teachers are not physically traveling, intuitively this will increase efficiency in the use of time and money.

   Weaknesses:

There were no weaknesses identified.

Reader's Score: 20

Selection Criteria - Adequacy of Resources/Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

   (1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

   (2) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.

   (3) The potential for continued support of the project after Federal funding ends, including, as appropriate, the demonstrated commitment of appropriate entities to such support.

   (4) The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

   Strengths:

   The applicant provided the qualifications and experience of the project lead and key personnel assigned to this grant (page, e37-e39). In reviewing the résumés, the qualifications and experiences of these key personnel are appropriate based on the number of years cited and previous work experience cited by the applicant. The amount of time the key personnel will be assigned to this grant (FTE) was provided. In reviewing these FTEs it is noted that the time will be sufficient and provide the needed reasonable resources for this grant. The applicant provided a timeline on page, e37, which outlines the milestones and person responsible, in a clearly delineated table. The applicant did provide a plan for continued support for some of the components (e40). The project will develop tools and platforms to build more resources for the district who will want to continue using the project at the end of the federal grant. The applicant provided an extensive cost analysis plan (page, e138). Based on the plan and cost formula, the applicant will be able to disaggregate at each level for state, district, school and classroom. This will allow the applicant to compute a cost-effectiveness ratio for this proposed intervention, this is exceptional.

   Weaknesses:

   The applicant's plan for continued support is based on the districts purchasing the services. Two of the key components of the project, professional learning and training will be offered at a nominal cost to the teachers and district. An estimated nominal cost should have been provided, so that an assessment could be made to determine if the nominal cost is reasonable for a district.

Reader's Score: 18

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 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:

N/A

Weaknesses:

N/A

Reader's Score: 0

Status:	Submitted
Last Updated:	05/16/2019 03:12 PM