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

Status: Submitted
Last Updated: 08/15/2023 02:24 PM

Technical Review Coversheet

Applicant: University of Texas Foundation (S411B230036)
Reader #1: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Significance			
1. Significance		15	0
Strategy to Scale			
1. Strategy to Scale		40	0
Quality of Project Design			
1. Project Design		15	0
Quality of the Project Evaluation			
1. Project Evaluation		30	27
	Sub Total	100	27
Priority Questions			
Competitive Preference Priority			
Competitive Preference Priority 1			
1. Promoting Equity		5	0
	Sub Total	5	0
	Total	105	27

Technical Review Form

Panel #4 - EIR Mid-phase - 4: 84.411B

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

Applicant: University of Texas Foundation (S411B230036)

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:**

Reader's Score: 0

Sub

1. **The extent to which the proposed project involves the development or demonstration of promising new strategies that build on, or are alternatives to, existing strategies.**

Strengths:

n/a

Weaknesses:

n/a

Reader's Score: 0

Selection Criteria - Strategy to Scale

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

Reader's Score: 0

Sub

1. **(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.**

Strengths:

n/a

Weaknesses:

n/a

Sub

Reader's Score: 0

2. **(2) 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.**

Strengths:

n/a

Weaknesses:

n/a

Reader's Score: 0

3. **(3) 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.**

Strengths:

n/a

Weaknesses:

n/a

Reader's Score: 0

4. **(4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.**

Strengths:

n/a

Weaknesses:

n/a

Reader's Score: 0

5. **(5) The likely utility of the products (such as information, materials processes, or techniques) that will result from the proposed project, including the potential for their being used effectively in a variety of other settings.**

Strengths:

n/a

Weaknesses:

n/a

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:**

Reader's Score: 0

Sub

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

   Strengths:

   n/a

   Weaknesses:

   n/a

   Reader's Score: 0

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

   Strengths:

   n/a

   Weaknesses:

   n/a

   Reader's Score: 0

3. **(3) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

   Strengths:

   n/a

   Weaknesses:

   n/a

   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:**

Reader's Score: 27

Sub

1. **(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 34 CFR 77.1(c)).**

Strengths:

The research questions are clear and effectively distinguish between impact ("student science knowledge"), exploration ("student characteristics moderate impact"), and implementation ("factors that support or inhibit"). (e38-e39) The impact research questions, in particular, are logically constructed for a randomized controlled trial design and are directly aligned with programmer goals. The RCT design strategically blocks by district and then randomizes at the school level for two cohorts, but schools only participate as treatment or control for one year each. (e40) Grade 2 teachers in treatment schools will be offered participation in MITOS. The evaluators sensibly anticipate approximately 240 teachers and 6,000 students, 1,200 of them English learners. This student design is an appropriate choice that is responsive to location (three districts) and grade level (2nd grade teacher-administered student assessments). The design can meet WWC standards without reservations if well implemented. (e39) In that vein, the decision to prioritize the confirmatory analysis as intent-to-treat is a valid one. (e41)

Impact data sources—teacher-administered student assessments and student administrative data (e38)—are reasonable choices given the design, impact research questions, programmer goals, and intervention at Grade 2. The CBM Vocabulary Subtest and Stanford Achievement Test Science Subtest are sensible impact outcome selections for Grade 2 students. (e41), as is the Texas English Language Proficiency Assessment data for research question 3. (e41), each being valid and reliable. (e125)

The power analysis is based on reasonable assumptions, including R-squared at the student level at 0.75 (assuming pretest scores are available), two-tailed test, etc. (e40). and minimum detectable effect sizes assuming between 10% to 20% student attrition. The evaluators sensibly used the PowerUp! program and utilized a model corresponding to the three-level analytic model with outcomes at level 2. (e118) The justification for minimum detectable effect sizes of 0.15 and 0.17 is sound, relying upon prior meta-analytic work on academic achievement of elementary students. (e40-e41)

The evaluators indicate that impact analyses will be conducted with a three-level model that accounts for students clustering within schools within districts. (e41) Student impact analyses are based on a logical analytic model (e119) that accounts for outcomes, treatment, student and school characteristics, and a district block.

The evaluators raise the possibility of contamination and crossover effects while indicating that an RCT design should minimize these concerns. (e42) The evaluators also rightly identify attrition as a concern for any RCT design. They note some strategic steps (e.g., carrying out randomization as late as possible) to mitigate attrition. Further, the evaluators have planned to provide teachers with stipends for student completion in order to minimize missing data. (e42) They appropriately note that if missing outcome data numbers are low, they will delete cases but conduct multiple imputation for missing covariates. (e121) The evaluators explain how they will address differential attrition, if necessary, through multiple imputation and/or matching procedures. (e42) They also raise the important topic of joiners, noting that they will follow WWC standards to include on "early joiners" based on student lists collected six weeks into school. (e42) Taken together, these approaches will likely allow the proposed study to meet WWC standards without reservations and are strengths of the proposal.

Weaknesses:

For the power analysis, the evaluators note that they are assuming that they will receive pretest scores. (e40; e118) It is unclear why the evaluators are making this decision or what pretest scores, especially for students entering Grade 2 across three districts, would be. Whether or not the districts (or state) have a low-stakes assessment or some other measure that could be used for the purpose of pretest scores is never discussed.

Although the evaluators note contamination (e42) and indicate it is unlikely to be an issue, some additional data or information about student mobility within districts (and potentially between Austin and Round Rock) would be helpful to understand how infrequently students move to fully demonstrate why contamination should not be a serious concern. On another note, the evaluators should have also at least noted an intention to test for baseline equivalence.

Reader's Score: 14

2. (2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.

Strengths:

Mediating (e.g., student vocabulary performance mediating science knowledge) and moderating (e.g., differences in student characteristics) are appropriately noted. (e41) The evaluators list a number of relevant student moderators (e.g., home language) and school moderators (e.g., composition demographics) (e120) to analyze with relevance to Texas, where the applicant is located, and beyond. These moderator analyses will reasonably be based on the student outcomes model with interaction terms included.

The optimization study is a clever way to strategically test on a small scale the MITOS+ intervention in treatment schools where participation in MITOS is low. (e42-e43) The study design is based on previous research of MITOS in which approximately one-third of treatment groups have low participation rates. MITOS+ allows teachers to engage students through small group support, an aspect of the intervention that the program staff want to extend and learn more about.

The evaluators underscore the importance of a cost analysis (e43-e44) and convincingly discuss how moderator analyses and various data (e.g., app usage, interview) will inform costs. They further detail cost analyses, indicating that they will use the ingredients approach to build a cost resource model. The method is a trusted approach to analyzing cost and the listing of the various data sources suggests an understanding about what data are key to conducting the cost analysis. Further, the evaluators distinguish between solving for costs to start a program versus to continue a program. (e44) The detailed cost analysis in Appendix J (e122-123) thoroughly explains the importance of cost and how the evaluators will conduct the various analyses, including an appropriate resource model. Overall, the cost sections of this proposal are a strength of the proposal because the evaluators will be able to share cost analysis results that will help the project team as well as the field better determine cost, replication, and moving to scale in the future. (e44)

The implementation study includes data sources that are appropriately varied, inclusive of user information, surveys, and interviews. These data will also be collected at multiple time points (e124), which should strengthen the evaluators' ability to share with confidence what they learn about strategies suitable for replication.

The lead evaluator has a strong record of sharing evaluation results at national research conferences, as well as for practitioners and administrators, through various strategies. She has also published in leading methods journals. (e29-e30) Moreover, the overall project has some clear dissemination strategies and goals, including the creation of a webpage. (e34) The timeline for dissemination is clear. (e124)

Weaknesses:

There are no weaknesses noted.

Reader's Score: 5

3. (3) 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.

Sub

Strengths:

The impact outcomes are clear and aligned with project objectives (e33). The evaluators are using valid and reliable measures (alpha of 0.94 and 0.95) for impact outcomes (e44), including achievement, which is commendable given that the study is of Grade 2 students. Further, one of the impact outcomes (e.g., student vocabulary development) is also leveraged as a mediator of science knowledge and ELP (e44), which makes sense both intuitively in the scaffolding of research but also in alignment with programmatic assumptions. (e44) The estimation of mediation using the model specified for research question 1 and a multilevel mediation model similar to the model used for research questions 2 and 3 is a sensible decision. The evaluators sufficiently discuss path analysis. (e120) Further, the optimization analysis of MITOS+ is a logical extension that is explained thoroughly. (e121)

Implementation measures map back to key programmatic components such as teacher completion of initial training and student use of the app three times per week (e45). Implementation fidelity thresholds for each component are based on previous research literature (e45), resulting in the evaluators reasonably decided that low implementation is less than 60%, medium levels of implementation between 60% and 80%, and high levels of implementation as above 80%. In addition, the evaluators indicate that they will construct an overall implementation fidelity score. of at least 90% inclusive of teacher satisfaction and training, parent satisfaction with workshops, (e34) student access of MITOS (e33)

The data sources are rich and varied while being responsive to the proposed research questions. Many of these data sources (e.g., teacher-administered student surveys, app usage data, teacher and family interviews, etc.) are provided in Exhibit 2. (e38-e39) They and others are also appropriately listed in Appendix J.6 (e126), further detailing how the data are to be collected, identifying the respondent(s), and providing a timeline for collection.

Weaknesses:

The proposal includes a number of varied data sources that have the potential to be very meaningful for program improvement. It is unclear how all of these data connect to the logic model (Appendix G, e108), however. More clearly stated, intentional connections between the evaluation and program are warranted. Further, the evaluators only provide any substantial detail on instruments for the impact outcome measures. Given how MITOS has been funded multiple times and this work continues to grow and expand, more information about other survey content (and if there is psychometric information), as well as usage data and interview protocol content could have strengthened this proposal.

Reader's Score: 4

4. (4) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.

Strengths:

The established working relationships between program staff and researchers (e27-e28) should facilitate open feedback. The lead evaluator’s expertise in evaluating teaching and learning programs for ELs, in particular, is especially beneficial, as her ability to not only understand the evaluation but put the evaluation into content context should help in advancing progress toward achieving intended outcomes.

The pilot testing on the front-end development of new activities in real settings, intentionally leveraging teachers, students, and families in different ways to understand access, usability, and quality (e33-e34, e36) should increase the chances of meaningful feedback for real-time adjustment. The evaluators’ design-based research can capitalize on a five-phased approach—design, development, research, deployment, and sustainability—to learn and inform. They are also building on existing MITOS programming through previously funded projects. Participants engage in gameplay and respond to interview questions for the evaluator to understand the appropriateness and quality of the program so the programmer can make adaptions. (e36) Further, the programmer development team is committed to reviewing survey and interview data to inform if and how they modify, add, or delete materials with consideration of linguistic and/or cultural tailoring. (e36-e37) There are also clearly identified opportunities to refine parent training

Sub

and increase parental engagement based on interview and observation data. (e38)

The evaluators will meet monthly with the program staff to “discuss findings from the prior month’s data.” (e45) This is a sizable commitment to not only analyze data monthly but to interpret and then help the program staff make sense of the results. They wisely point out that these conversations are not limited to implementation but also inclusive of feasibility. The evaluators will leverage usability and feasibility, as well as implementation, to inform the program staff. These data include varied survey and qualitative sources (e.g., teacher and family member interviews; spring teacher survey). (e46) The evaluators also identify the areas in which they intend to learn from participants to inform the project staff, as well as explicitly note that they will try to identify differences based on school level of MITOS program fidelity. Further, the evaluators point out that they can capitalize on monthly monitoring of usage data and intend to report on results from the first cohort to potentially inform the second. (e46)

Weaknesses:

The evaluators are collecting a considerable amount of survey and interview data to inform programmer design and practice. Yet, there is insufficient detail about the data analysis procedures to be completely confident that the learning will be systematic and that the findings will be practically meaningful for the programmer. Descriptive analyses, significance testing, factor analysis, and other survey data analyses could be employed and then reported on for programming purposes. Deductive and/or inductive coding of interview data could also be leveraged to make sense of findings. Details such as these, however, are missing from the proposal.

Reader's Score: 4

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

1. Competitive Preference Priority 1:

Promoting Equity in Student Access to Educational Resources and Opportunities: Implementers and Partners (up to 5 points)

Under this priority, an applicant must demonstrate how the project will be implemented by or in partnership with one or more of the following entities:

(a) Community colleges (as defined in the NIA)
(b) Historically Black colleges and universities (as defined in the NIA)
(c) Tribal Colleges and Universities (as defined in the NIA)
(d) Minority-serving institutions (as defined in the NIA)

Strengths:

n/a

Weaknesses:

n/a

Reader's Score: 0

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Technical Review Coversheet

Applicant: University of Texas Foundation (S411B230036)
Reader #2: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Significance			
1. Significance		15	15
Strategy to Scale			
1. Strategy to Scale		40	29
Quality of Project Design			
1. Project Design		15	12
Quality of the Project Evaluation			
1. Project Evaluation		30	0
	Sub Total	100	56
Priority Questions			
Competitive Preference Priority			
Competitive Preference Priority 1			
1. Promoting Equity		5	5
	Sub Total	5	5
	Total	105	61

Technical Review Form

Panel #4 - EIR Mid-phase - 4: 84.411B

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

Applicant: University of Texas Foundation (S411B230036)

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:**

Reader's Score: 15

Sub

1. **The extent to which the proposed project involves the development or demonstration of promising new strategies that build on, or are alternatives to, existing strategies.**

Strengths:

The proposed project holds excellent promise in developing and demonstrating innovative new strategies which build on prior work and are alternatives to existing strategies. These strategies are promising because they use a gamified device-based platform to support a focus on English learners vocabulary instruction in content areas and engage families in students' practice work (e14). The system provides teachers with formative assessment information through natural language processing (e14). Further, the project will use a two-cohort randomized control trial (RCT) approach which will advance knowledge in this area (e124).

Weaknesses:

No weaknesses noted.

Reader's Score: 15

Selection Criteria - Strategy to Scale

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

Reader's Score: 29

Sub

1. **(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.**

Sub

Strengths:

The strategies described here are excellent and build upon lessons learned from prior instantiations. For example, the applicant appropriately addresses three particular barriers which have prevented them in prior projects from reaching the level of scale proposed here. These barriers are (1) restrictions in where and how MITOS could be used when it was only PC-based, (2) teachers wanting guidance to target extra support for students in need, and (3) limitations in how the program accommodates students with low English proficiency (e24). They propose specific strategies to address each of these such as developing the platform for use on any device, automatic scoring of student reponses and downloadable lessons for each weekly unit, and Spanish translations for all the materials so they may be used at home (e24-26).

Weaknesses:

Although the applicant mentions their prior work and some of the associated barriers, it is not clear how these barriers affected the scale of the prior work. That is, the applicant should have provided more data/information about how the numbers of students able to be reached were affected. For example, they could have used data from post-intervention surveys or other outcomes-related reports.

Reader's Score: 8

2. **(2) 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.**

Strengths:

The management plan is good. It includes 15 appropriate objectives, related and appropriate milestones, and a list of which entities are responsible for which milestones (e129-131), as well as a very detailed budget justification (e149-173). Following this plan should help the project to complete its objectives on time and within budget.

Weaknesses:

The reporting structure is unclear making it difficult to determine how tasks will be managed between entities. It is unclear what kind of meetings will take place between team members and how often to be able to effectively manage deliverables and timelines.

It is unclear what the role of UT Foundation will be (e26). It is also unclear how they will manage the financial reporting and tracking across entities (see also e168).

Reader's Score: 3

3. **(3) 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.**

Strengths:

The applicant’s capacity is excellent, and a strength of this proposal. Each of the key personnel has extensive qualifications and experience, including having conducted similar projects or instantiations of the proposed work. For example, the PI has conducted two previous Institute of Education Science grants conducting related work on vocabulary acquisition (e22-23). The budget justification shows appropriate allocations of resources and sufficient levels of effort. Costs have been reduced by the inclusion of undergraduate and graduate students in completing the work (e152).

Sub

Weaknesses:

It is unclear whether UT Foundation has the necessary qualifications and experience at managing similar relevant grants, or federal grants in general (e26), because this entity is not fully described in the proposal.

For personnel to be hired it is unclear what qualifications will be required (e132).

Reader's Score: 9

4. (4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.

Strengths:

The applicant has a good dissemination plan. For example, they plan to publish papers in peer-reviewed journals (e29). Additionally, they will house a website with one place to gather and disseminate the information including all papers and presentations and use each project partner's social media networks of thousands of educators for sharing resources (e29). The applicant has also assigned responsibility for writing papers and distributing resources among the project personnel.

Weaknesses:

The applicant states they will attend professional researcher/teacher conferences, however the dissemination plan would have been stronger if they had plans to present papers at such conferences (e29).

The proposal would have been stronger with specific plans for outreach to chief school officers, superintendents, principals, and policy makers to foster widespread state-wide and regional use (e29-30).

The proposal would have been stronger by including lists of publication venues and/or journals for both researchers and teachers, especially where the authors have prior experience.

Reader's Score: 6

5. (5) The likely utility of the products (such as information, materials processes, or techniques) that will result from the proposed project, including the potential for their being used effectively in a variety of other settings.

Strengths:

The main product to result from this project has good utility due to its cross-platform capabilities (e31), built-in assessment through natural language processing (e18,22), and ease of use with teachers (e24-25). It is also designed with Next Generation Science Standards and Texas state standards in mind, making it more justifiable for teachers to use (e25). The use of Spanish lessons, plus the emphasis on ESL language acquisition should be useful to the growing population of school-aged native Spanish speakers nationwide (e25-26).

Weaknesses:

The project team plans to create six-month license agreements to allow use of the content with new schools (e30). This is a weakness as it decreases the utility of the product; schools should be able to use the materials for free, or the applicant should have provided a detailed rationale for the inclusion of the licensing agreement.

The applicant suggests that they will support replication and further development by making databases freely available (e30) but it is unclear what this means as they don't describe the information contained in these databases, who they will be useful to, and how they could be used.

Sub

The proposal would have been strengthened by more fully describing how information about the programs, project design, and lessons learned would be provided to those wanting to use the products (such as developing a best practice guide).

Reader's Score: 3

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:**

Reader's Score: 12

Sub

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

Strengths:

The proposed research and demonstration activities have an excellent conceptual framework. The logic model exemplifies this framework by showing the key project inputs, activities, outputs and short- and long-term student outcomes (e108). The research linking the inclusion of the key features to the desired dependent variables is explained well and provides a sound rationale for the project design. For example, three prior research papers (by the PI) link vocabulary instruction to vocabulary development which is linked to improved science content knowledge and English language proficiency (e184-185). They also justify the use of parental engagement (e32), and learning through technology (e32-33).

Weaknesses:

No weaknesses noted.

Reader's Score: 5

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

Strengths:

Overall, the design of the goals, objectives, and outcomes is good. There are four objectives, with 15 specific and measurable strategies. All fifteen outcomes are measurable, as shown by each of the fifteen outcome measures (one per strategy) (e34-35). For example, under the objective to adapt the app for game play on multiple devices, the strategy “enhance teacher dashboard for easy data visualization” is measured by “teachers report high feasibility and ease of use” (e34).

Weaknesses:

The applicant has a purpose statement on page e33, but has little mention of project goals.

The four objectives are not very specific (e34-35). For example one objective reads, “Dissemination” (e35). For this to be more specific it should describe some key components such as who the target audience is, what is being disseminated, or how dissemination would take place.

Sub

The objectives as shown on e33-35 do not align well with the logic model inputs, activities, or outputs (e108). That is, the logic model has seven inputs and five activities, but how they map onto the four objectives is not clear, making it difficult to determine how the logic model outputs line up with the outcomes on pages e33-35. For example, the output “teachers make assignments using the app and the data dashboard” does not have an associated outcome on pages e33-35.

Reader's Score: 3

3. **(3) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

Strengths:

Certain design features to address the needs of the target population are very good. The applicant has identified the needs of ESL students and the ways in which they acquire language and has designed the software to directly address such needs, which research shows is likely to result in better English proficiency and science content knowledge (e35). The design also uses a Design-Based Research approach and incorporates multiple iterative cycles of design, evaluate, and revise which will allow the approach to zero in on the particular needs of the target population with regards to vocabulary development (e36). The same pilot-testing approach will be used to ensure that the needs of the parents are accomodated (e38). Teacher needs for greater flexibility and less time managing students have also been taken into account in the software with automatic assessments and optional weekly lessons aligned with what the students are learning (e24-26).

Weaknesses:

It is unclear what kind of access to and proficiency with devices these very young (and presumably economically disadvantaged) learners have at home. The proposal would have been strengthened with a rationale citing such statistics.

Reader's Score: 4

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:**

Reader's Score: 0

Sub

1. **(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 34 CFR 77.1(c)).**

Strengths:

Weaknesses:

Sub

Reader's Score:

2. **(2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.**

Strengths:

Weaknesses:

Reader's Score:

3. **(3) 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:

Weaknesses:

Reader's Score:

4. **(4) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.**

Strengths:

Weaknesses:

Reader's Score:

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

1. **Competitive Preference Priority 1:**

Promoting Equity in Student Access to Educational Resources and Opportunities: Implementers and Partners (up to 5 points)

Under this priority, an applicant must demonstrate how the project will be implemented by or in partnership with one or more of the following entities:

(a) Community colleges (as defined in the NIA)
(b) Historically Black colleges and universities (as defined in the NIA)
(c) Tribal Colleges and Universities (as defined in the NIA)
(d) Minority-serving institutions (as defined in the NIA)

Strengths:

(Option D) The applicant (University of Texas Austin) is a minority serving institution. They will be implementing the majority of the project activities (e108).

Weaknesses:

No weaknesses noted.

Reader's Score: **5**

Status: Submitted

Last Updated: 08/15/2023 01:58 PM

Status: Submitted
Last Updated: 08/15/2023 11:54 AM

Technical Review Coversheet

Applicant: University of Texas Foundation (S411B230036)
Reader #3: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Significance			
1. Significance		15	0
Strategy to Scale			
1. Strategy to Scale		40	0
Quality of Project Design			
1. Project Design		15	0
Quality of the Project Evaluation			
1. Project Evaluation		30	29
	Sub Total	100	29
Priority Questions			
Competitive Preference Priority			
Competitive Preference Priority 1			
1. Promoting Equity		5	0
	Sub Total	5	0
	Total	105	29

Technical Review Form

Panel #4 - EIR Mid-phase - 4: 84.411B

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

Applicant: University of Texas Foundation (S411B230036)

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:**

Reader's Score: 0

Sub

1. **The extent to which the proposed project involves the development or demonstration of promising new strategies that build on, or are alternatives to, existing strategies.**

Strengths:

N/A

Weaknesses:

N/A

Reader's Score: 0

Selection Criteria - Strategy to Scale

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

Reader's Score: 0

Sub

1. **(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.**

Strengths:

N/A

Weaknesses:

N/A

Sub

Reader's Score: 0

2. **(2) 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.**

Strengths:

N/A

Weaknesses:

N/A

Reader's Score: 0

3. **(3) 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.**

Strengths:

N/A

Weaknesses:

N/A

Reader's Score: 0

4. **(4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.**

Strengths:

N/A

Weaknesses:

N/A

Reader's Score: 0

5. **(5) The likely utility of the products (such as information, materials processes, or techniques) that will result from the proposed project, including the potential for their being used effectively in a variety of other settings.**

Strengths:

N/A

Weaknesses:

N/A

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:**

Reader's Score: 0

Sub

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

   Strengths:

   N/A

   Weaknesses:

   N/A

   Reader's Score: 0

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

   Strengths:

   N/A

   Weaknesses:

   N/A

   Reader's Score: 0

3. **(3) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

   Strengths:

   N/A

   Weaknesses:

   N/A

   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:**

Reader's Score: 29

Sub

1. **(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 34 CFR 77.1(c)).**

Strengths:

The applicant presents a strong evaluation design that is likely to meet What Works Clearinghouse (WWC) standards without reservations if implemented as proposed. Sixty schools over two cohorts will participate in a unique approach known as a sequential, multiple assignment, randomized trial (SMART) design (e39-e40), in which schools are randomized to condition within district blocks and a portion of the treatment group is further randomized to the treatment plus supports. This design will allow for an overall impact estimate and exploratory analyses of the effect of differentiated support for students who are not responding to the standard treatment approach. A total of 240 teachers and 6000 grade 2 students are expected to participate in the project, with half of the sample participating in each one-year cohort (e13). The applicant justifies that this sample is sufficient for estimating the effectiveness of the treatment by presenting a detailed summary of the power analyses and the related minimum detectable effect sizes (e40). All the proposed outcome measures are supported with reliability statistics and are consistent with the target constructs being evaluated without being over aligned. Several strategies will be used to minimize attrition to the extent possible, including conducting random assignment at the beginning of the school year and providing incentives to study participants. For example, teachers will receive $250 for performing student data collection (e10) and teachers and students' family members will receive $25 to participate in interviews and focus groups (e10). After randomization, the only students who will be added to the analytic sample are those who enter each school within the first 6 weeks of treatment (or early joiners) so that there is no risk of bias, which is consistent with WWC standards (e42). The statistical models are clear and comprehensive, including controlling for baseline outcome measures (e41). Appropriate strategies are discussed for handling missing data (e42). The applicant identifies an independent evaluator with experience in conducting large randomized controlled trials, which provides confidence that the evaluation will likely meet WWC standards without reservations (e29).

Weaknesses:

No weaknesses noted.

Reader's Score: 15

2. **(2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.**

Strengths:

A set of rigorous research questions serves as a strong framework for providing guidance about effective strategies (e38-e38). The confirmatory impact questions will seek to identify and provide guidance on whether the treatment was effective at increasing student achievement, which provides outcomes of interest to those seeking to accelerate student learning. The evaluation also will provide guidance on whether student or school characteristics moderate the effectiveness of the treatment, which allows for an understanding of the appropriateness of replication in other settings (e41). The applicant provides an excellent rationale for the selection of each school district and demonstrates how their settings differ (e148). In addition, the plans for a cost analysis are clear and reasonable (e44). The applicant will maximize the existing dissemination networks and tools of each partner to share the project findings and provide guidance about replication in other settings (e29). A dedicated website will be developed that will make available project papers and presentations, social media will be used to promote the website, and the applicant will also target key peer-reviewed journals and national conferences as methods for disseminating information about the project (e29). Taken together these approaches will likely provide information about effective strategies arising from the proposed project suitable for replication or testing in other settings.

Sub

Weaknesses:

No weaknesses noted.

Reader's Score: 5

3. **(3) 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 an evaluation plan that clearly articulates the key project components, mediators, and outcomes, and sets measurable thresholds for acceptable implementation for the key components (e45). The key project components include teacher training, a parent workshop, student use of the application, teacher use of the data dashboard, and supplemental small group sessions for students needing support (e44). Each key component has an aligned threshold (for example, students must use the application at least three times per week and teachers must use the data dashboard at least once every two weeks) (e45). The applicant identifies one potential mediator (student vocabulary), and details sound plans for testing the effect of this mediator on student outcomes. Specifically, the applicant proposes a valid use of multilevel path analyses to test whether student vocabulary mediates student science knowledge and English learner proficiency outcome (e41).

Weaknesses:

No weaknesses noted.

Reader's Score: 5

4. **(4) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.**

Strengths:

Several strategies will be used to ensure that performance feedback is collected and that there are ongoing mechanisms for permitting a periodic assessment of progress toward achieving the intended outcomes. For example, the applicant proposes a pilot study of the treatment using a design-based research process that will allow performance feedback to be collected and addressed prior to the impact study (e36). The purpose and intended outcomes of the pilot are clearly explained and include ensuring that the treatment will meet the needs of students who rely on translations to make sure the translations are appropriate, understandable, and linguistically and culturally suitable (e36). Importantly, the pilot will also collect feedback from parents to ensure that the intended parental support is sufficient (e37). There will be a formal system in place to provide periodic assessments of progress. This system will include meeting with the project team monthly to discuss the prior month's implementation fidelity data based on teacher training records and application usage data (e45). In addition, midway into each evaluation year they will purposively sample teachers and students' family members to participate in interviews and focus groups based on levels of fidelity to ensure that feedback is representative of the stakeholder experiences (e10). The applicant will also collect implementation fidelity data from all treatment teachers in a survey at the end of the year to ensure that the fidelity sample includes all teachers and not just a sample (e46). The design allows for an initial estimate of the project's impact on student outcomes after the first cohort finishes the treatment and this will allow for an understanding of whether the project is on track to meet the intended outcomes after the second cohort finishes the treatment.

Weaknesses:

The applicant does not discuss how the various qualitative data will be analyzed with the quantitative data concurrently to determine whether they result in convergent or divergent findings. For example, it is not clear how the data from the interviews and focus groups will be analyzed with the teacher survey data and the monthly implementation data (e46).

Sub

Reader's Score: 4

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

1. Competitive Preference Priority 1:

Promoting Equity in Student Access to Educational Resources and Opportunities: Implementers and Partners (up to 5 points)

Under this priority, an applicant must demonstrate how the project will be implemented by or in partnership with one or more of the following entities:

(a) Community colleges (as defined in the NIA)
(b) Historically Black colleges and universities (as defined in the NIA)
(c) Tribal Colleges and Universities (as defined in the NIA)
(d) Minority-serving institutions (as defined in the NIA)

Strengths:

N/A

Weaknesses:

N/A

Reader's Score: 0

Status: Submitted
Last Updated: 08/15/2023 11:54 AM

Status: Submitted
Last Updated: 08/15/2023 03:37 PM

Technical Review Coversheet

Applicant: University of Texas Foundation (S411B230036)
Reader #4: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Significance			
1. Significance		15	15
Strategy to Scale			
1. Strategy to Scale		40	34
Quality of Project Design			
1. Project Design		15	11
Quality of the Project Evaluation			
1. Project Evaluation		30	0
	Sub Total	100	60
Priority Questions			
Competitive Preference Priority			
Competitive Preference Priority 1			
1. Promoting Equity		5	5
	Sub Total	5	5
	Total	105	65

Technical Review Form

Panel #4 - EIR Mid-phase - 4: 84.411B

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

Applicant: University of Texas Foundation (S411B230036)

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:**

Reader's Score: 15

Sub

1. **The extent to which the proposed project involves the development or demonstration of promising new strategies that build on, or are alternatives to, existing strategies.**

Strengths:

The applicant clearly demonstrates the use of promising new strategies in the acquisition of grade 2 science academic vocabulary. These new strategies are based on and build from existing strategies (i.e., PC-based virtual tutor in English only). The new strategies include app development on a range of platforms in and out of classrooms, automated scoring of student interactions, teacher dashboard to support the use of formative data, and structured processes for families to engage in science discussions with their children).

Weaknesses:

None noted

Reader's Score: 15

Selection Criteria - Strategy to Scale

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

Reader's Score: 34

Sub

1. **(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.**

Strengths:

The applicant identifies three barriers, including restrictions in where and how the MITOS program was used. Strategies for addressing each barrier are described and include facilitating flexible use of the MITOS program by

Sub

developing an app for use on a range of devices other than PCs. Additionally, insufficient supports for students with low English proficiency is an identified barrier that will be addressed by (1) translating the curriculum into Spanish and (2) integrating a feature that allows students to choose to conduct activities in Spanish. (e23-24) Thus the applicant clearly describes appropriate strategies to address the identified barriers.

Weaknesses:

More data (i.e., number of students and teachers, proportion experiencing the reported barriers, etc.) on the prior project are needed in order to understand how these barriers have prevented this applicant from reaching the scale proposed in this application.

Reader's Score: 9

2. **(2) 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.**

Strengths:

The project includes a management plan that delineates, by quarter, two objectives and two goals. For each goal or objective, milestones, some of which contain a quantitative measure, are provided (i.e., 3.2 Fidelity and quality of implementation is above 90%). (e129-131) The partner responsible for leading each strategy is identified.

Weaknesses:

The proposal would be improved by clearly distinguishing goals and objectives, distinguishing strategies from objectives, and providing separate columns for milestones and measures in order to distinguish milestones and their measures. Also, a more granular timeline would bring significant clarity to objectives 1 and 2, given that seven of eight strategies occur in every quarter during the 25-26 school year. With respect to responsible parties, identifying a specific role and/or person responsible, rather than simply an organizational entity, for each milestone would be clarifying. Thus, the management plan does not provide adequate information that would suggest the objectives are likely to be achieved on time.

Reader's Score: 3

3. **(3) 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.**

Strengths:

The project involves highly qualified personnel from UT Austin, Southern Methodist University and AIR (e28-e29). The research team has worked together on two previous IES projects related to recognizing and scoring student language samples. Key personnel have expertise in each of the major areas of the project and have worked on state-level projects and have signification educational leadership experience.

Weaknesses:

Additional detail on the roles, responsibilities, and qualifications of the project coordinator and others who will manage the grant would strengthen the proposal.

Reader's Score: 8

4. **(4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.**

Sub

Strengths:

Plans to disseminate findings appropriately include leveraging the existing dissemination network of UT Austin and its partners. Meadows Center for Preventing Educational Risk will host the project's website that will include links to collaborating institutions, and publications derived from the project. Dissemination efforts target a range of audiences (i.e., research, policy) as well as specific educational associations (i.e., AERA, SREE, NSTA). The mechanisms include presentations at national conferences, publishing in peer-reviewed journals, and the use of social media, video and parent-friendly reports to support further development and replication. Additionally, dissemination strategies target parents via workshops through schools and national parent engagement organizations. (e29-30)

Weaknesses:

None noted.

Reader's Score: 10

5. **(5) The likely utility of the products (such as information, materials processes, or techniques) that will result from the proposed project, including the potential for their being used effectively in a variety of other settings.**

Strengths:

In addition to parent-friendly videos and reports in English and Spanish, the applicant intends to publish research articles and conduct presentations on the proposed project that are likely to be useful for a range of audiences. Aligning the MITOS app science content to the Next Generation Science Standards increases the potential for its use nationally (e29-31)

Weaknesses:

The potential for use in other settings will be constrained by a licensing cost agreement for product use.

Reader's Score: 4

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:**

Reader's Score: 11

Sub

1. **(1) 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 provides a comprehensive conceptual framework for all components that will comprise the MITOS project (e32-33). Research on the positive outcomes (e.g., higher English language proficiency) associated with family engagement, the increased active engagement with integration of auditory and visual modalities (e32) and the positive effects on learning when academic concepts are developed through students' primary language (e33) underly the conceptual framework and the proposed activities. These components support both the development of vocabulary, science content knowledge, and English language proficiency as presented in the logic model. (e108)

Sub

Weaknesses:

None noted.

Reader's Score: 5

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

Strengths:

The objectives and outcomes are specified (e33-35).

Weaknesses:

The proposal could be improved by consistent statements of the objective and/or clearly identifying goals. In the management plan (Appendix J), statements identified as goals are identified as objectives on e34 and e35. Providing objectives and outcomes, with additional detail, which indicate the extent to which scaling is successful would also benefit the proposal. For example, including context and specificity to objective 4 – "Dissemination" – would bolster the proposal. Given a goal of engaging 240 teachers, an outcome of ten pilot teachers providing feedback on MITOS seems less than sufficient or representative. Therefore, a rationale for this outcome would be clarifying. Including a specific quantitative measure that illustrates concrete attainment to be achieved in all objectives would also benefit the proposal. For example, including a target number of districts or schools for scaling, the target percentage of students utilizing the MITOS app or other goals conveying the extent to which scaling is achieved would benefit the proposal.

A consistent statement of the outcomes across the logic model (e108) and chart of objectives, strategies and outcomes/measures (Exhibit 1 on e33) would bolster the proposal.

Reader's Score: 2

3. **(3) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

Strengths:

The proposed project has significant potential to successfully address the needs of the target population. A gaming approach (i.e., integrating auditory and visual modalities to learning) to building academic vocabulary is likely to meet the needs of 2nd grade English learners by integrating oral language instruction into science lessons. (e35-38)

Weaknesses:

The applicant does not provide details on the training of teachers or rationale for a single teacher professional development module. If the premise is that elementary teachers have sufficient knowledge in the teaching of academic language, a discussion with supporting research would strengthen the proposal.

Reader's Score: 4

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:**

Reader's Score: 0

Sub

1. **(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 34 CFR 77.1(c)).**

Strengths:

Weaknesses:

Reader's Score:

2. **(2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.**

Strengths:

Weaknesses:

Reader's Score:

3. **(3) 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:

Weaknesses:

Reader's Score:

4. **(4) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.**

Strengths:

Weaknesses:

Reader's Score:

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

1. **Competitive Preference Priority 1:**

   Promoting Equity in Student Access to Educational Resources and Opportunities: Implementers and Partners (up to 5 points)

   Under this priority, an applicant must demonstrate how the project will be implemented by or in partnership with one or more of the following entities:

   (a) Community colleges (as defined in the NIA)
   (b) Historically Black colleges and universities (as defined in the NIA)
   (c) Tribal Colleges and Universities (as defined in the NIA)
   (d) Minority-serving institutions (as defined in the NIA)

   Strengths:

   The applicant meets this competitive preference via option (d). The University of Texas at Austin is a minority serving institution and will lead project implementation. Additionally, UT undergraduate and graduate research assistants will support content refinement and development of the MITOS app. UT will recruit undergraduate and graduate assistants that are current or former ELs.

   Weaknesses:

   None noted.

Reader's Score: **5**

Status: Submitted
Last Updated: 08/15/2023 03:37 PM

Status: Submitted
Last Updated: 08/15/2023 05:33 PM

Technical Review Coversheet

Applicant: University of Texas Foundation (S411B230036)
Reader #6: **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Significance			
1. Significance		15	13
Strategy to Scale			
1. Strategy to Scale		40	30
Quality of Project Design			
1. Project Design		15	11
Quality of the Project Evaluation			
1. Project Evaluation		30	0
	Sub Total	100	54
Priority Questions			
Competitive Preference Priority			
Competitive Preference Priority 1			
1. Promoting Equity		5	5
	Sub Total	5	5
	Total	105	59

Technical Review Form

Panel #4 - EIR Mid-phase - 4: 84.411B

Reader #6: **********

Applicant: University of Texas Foundation (S411B230036)

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:**

Reader's Score: 13

Sub

1. **The extent to which the proposed project involves the development or demonstration of promising new strategies that build on, or are alternatives to, existing strategies.**

Strengths:

The proposed project builds on an expanded version of the MITOS app for game play to increase student opportunities to learn and develop science proficiency, which is a promising new strategy that has potential to engage students within a “gamified environment,” where learning is connected with play (e13). The app specifically builds vocabulary and content knowledge together while leveraging family engagement, which is another strength as it will build on and provides an alternative to formal school homework and methods (e14). The idea is that the project will be able to develop the program for multiple devices and to further calibrate it so that it can be used without adult support, among other assessments, building on a promising new strategy for science education for English Learners at an early age (e13). The project is an evolution from several previous app systems including ELVA and MELVA, which conducted similar studies, with funding by the Dept of Ed, IES, thus showing a good foundation for the promising strategy (e23).

Weaknesses:

A weakness is that the promising strategy builds in additional screen time for a young population, particularly during home and personal family times, which could be problem when children may be getting exposed far too early and too extensively to screen time devices.

Reader's Score: 13

Selection Criteria - Strategy to Scale

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

Reader's Score: 30

Sub

1. **(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.**

Strengths:

The project clearly identifies three key barriers from the previous version of MITOS, including restrictions on use, teachers needing guidance and limitations in how the program accommodates students with low English proficiency, suggesting that clear outcomes have been derived from past strategies that have limited the program from going to scale (e24). The project will expand the use of the app across devices and settings in the scaled-up version, with additional accessibility to an assessment data dashboard for teachers, and importantly, will be available for download via smartphone, which is a strength given how ubiquitous that technology is (e24). The program also has speech recognition and automated scoring to provide immediate student feedback, something that has been shown to improve understanding and engagement (e25). The project also notes a previous limitation having to do with English Learners who were struggling to answer questions posed by the avatar; in this scaled up version, the curriculum will be translated into Spanish to allow Latinx ELs to engage more fully (e25).

Weaknesses:

The extent to which teacher issues were addressed sufficiently was not completely clear, especially given the numerous and varying demands on their time and attention. Additional details on how teachers will use the app or the data dashboard would have been informative from the previous project to understand better this project's potential for scaling in terms of how it would address teacher needs.

Reader's Score: 8

2. **(2) 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.**

Strengths:

The Appendix provides a management plan on p. e129 that is clearly coded by quarter each year with specific objectives and measures with some general overall responsible parties.

Weaknesses:

The applicant's management plan was unclear as no specific section of the proposal narrative was expressly designated to address this topic. Information gathered from throughout the proposal which did address this topic was lacking and non-specific; for example, no particular person was listed as in charge of particular activities and many measures stated were not really measures or milestones as just completed components, e.g., "All pilot participants provide feedback" (e129).

Reader's Score: 2

3. **(3) 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.**

Strengths:

The team appears to be well supported with qualified personnel with partnerships between Texas school districts, the University of Texas, Southern Methodist University and American Institutes for Research (e26). This team has worked together on previous IES-funded projects and thus have sufficient experience dealing with the administrative and management aspects of a project of this size (e27). Details as listed in the budget justification

section appear well documented with sufficient granularity to ensure confidence in the applicant's capacity to bring the project to scale (e170). For example, the listing for travel (out of state) includes a detailed breakdown including where the trip is, per diem, ground transportation and hotel details based on the area. Other cost breakdowns are similarly detailed (e172). A nice feature is the incorporation of family liaison specialists who can support the use of the app in the home (e27) which should provide important expertise for in-home use among family stakeholders. The project PI has ample experience in working with research interventions, particularly involving Latinx ELs and state of the art technology including speech recognition systems (e28). She also has experience as PI on multiple Institute of Education (IES) grants among others involving large efficacy trials looking at vocabulary and language proficiency needs (e28). Others on the team have an impressive range of experience including educational apps, English Learners, and evaluation programs for ELs (e29).

Weaknesses:

A minor point is that more details would have been helpful about how engaged teacher representatives and district personnel would be involved. A large part of this program development seemed heavily coordinated and organized by UT Austin, exclusively and less so in the school districts.

Reader's Score: 8

4. **(4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.**

Strengths:

Existing dissemination tools at the various partner institutions will be used, including development of a project website and landing page (e29) which should provide a good portal for further development or replication (e29). In addition, modern social media channels will be utilized as well as more traditional methods of dissemination (conference presentations and publishing in peer-reviewed journals), showing good breadth and variety of dissemination types (e29). Parents will also be targeted which is a particular noteworthy strength as they often are ignored in dissemination plans (e30). Plans are also underway to support the development and replication of MITOS by making databases available to the research community and by disseminating packages for processing data on mobile platforms (e30). License agreements will be created to allow access to content for six months or as is appropriate.

Weaknesses:

More details about engagement with other app communities and education tech groups would have provided a better sense of how this tool could be disseminated or garner interest in a field that is experiencing a large influx of similar type apps and content. There are numerous other similar programs or apps in use today that might provide a useful comparison point for describing the context of this particular app so as to promote dissemination.

Reader's Score: 8

5. **(5) The likely utility of the products (such as information, materials processes, or techniques) that will result from the proposed project, including the potential for their being used effectively in a variety of other settings.**

Strengths:

The MITOS app uses Next Generation Science Standards and aligned content for science learning so that it can be used effectively in a variety of settings and should have good utility (e31). Additionally, as a scaled-up version, MITOS will be available on a much wider set of platforms, including one for the smartphone. The same approach (app) has the potential for being used in other content areas including mathematics and social science (e31).

Sub

Weaknesses:

The main product described as being made available is the MITOS app but there might be additional guides, vocabulary lists, tech help instructions, or other ancillary documents/data that might also provide useful information for future use and utility. A few more details would strengthen the proposal about other types of associated products or materials (e.g., MITOS resources, help pages, use information) that might be made available.

Reader's Score: 4

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:**

Reader's Score: 11

Sub

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

Strengths:

One of the underlying conceptual foundations of the project is that “a deep understanding of science requires development of science vocabulary from the earliest stages of learning” (e17), which is a noted strength as the project focuses on learning and vocabulary development in 2nd grade. Another important framework that this project builds upon is a recommendation from WWC noting the benefit of integrating oral and written English language instruction into content-area teaching (e19). It also similarly highlights the framework that a positive causal relationship between students’ first and second languages transfers to other languages, suggesting that this focus on vocabulary and English learning will be valuable for building content knowledge and academic language more broadly across numerous disciplines (e33).

Weaknesses:

One of the listed foundational frameworks for this project is parental engagement, but the app appears to be designed so that students can use it independently More details about how parents can be engaged with the tool, other than simply helping their student use it or with structured discussion, would have strengthened the proposal as parental engagement is often very difficult to promote and monitor (e32).

Reader's Score: 4

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

Strengths:

A table is provided on e33 which shows objectives, strategies, and outcomes/measures, providing a good overall framework with measurable outcomes.

Weaknesses:

A weakness was that more details and explanation could have been provided about the larger goals of the program as well as how those mapped on to the more specific objectives or activities listed in Exhibit 1 (e33). For example, they state under “outcomes” that “Development team completes phases of DBR for gamifying activities,” but gamifying was not sufficiently defined, and it seemed more like a large general phase in activities rather than a

Sub

specific measure (e33).

Reader's Score: 3

3. **(3) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

Strengths:

The target population is English Learners, and the proposed project is specifically addressing their needs by providing a way to learn and expand their knowledge of a content area by engaging in conversations and developing vocabulary around key text (e14). The targeted grade level is 2nd grade, an age that is particularly receptive to games and apps and where students are transitioning from developing foundational reading skills to increasing comprehension of informational text and becoming more independent (e22). Lessons will be translated into Spanish to address the needs of Latinx students with low English proficiency (e18), which is a noted strength for this population and will likely meet their needs. The app has a built-in friendly character to converse with children that should help to engage this target population of 2nd graders (e19).

Weaknesses:

A weakness is that 2nd grade is possibly a time when many parents and teachers may want to limit students' technology usage to a certain degree, particularly phone-based apps, and another game-type phone app might make that distance from screen time harder to enforce or negotiate. More details could have been provided about the context of promoting apps, particularly with respect to potential dangers, e.g., increasing screen time, phone overuse.

Reader's Score: 4

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:**

Reader's Score: 0

Sub

1. **(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 34 CFR 77.1(c)).**

Strengths:

Weaknesses:

Reader's Score:

2. **(2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.**

Sub

Strengths:

Weaknesses:

Reader's Score:

3. **(3) 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:

Weaknesses:

Reader's Score:

4. **(4) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.**

Strengths:

Weaknesses:

Reader's Score:

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

1. **Competitive Preference Priority 1:**

Promoting Equity in Student Access to Educational Resources and Opportunities: Implementers and Partners (up to 5 points)

Under this priority, an applicant must demonstrate how the project will be implemented by or in partnership with one or more of the following entities:

(a) Community colleges (as defined in the NIA)
(b) Historically Black colleges and universities (as defined in the NIA)
(c) Tribal Colleges and Universities (as defined in the NIA)
(d) Minority-serving institutions (as defined in the NIA)

Strengths:

The project is partnering with UT Austin, a recently designated Hispanic Serving Institution (option (d)), which should be a good fit for the collaboration with the app serving large percentages of English Learners in that area (e21). A strength is that the partnership is extensive, with UT Austin implementing Project MITOS and many leaders embedded within that

institutional environment.

Weaknesses:

No weaknesses noted.

Reader's Score: **5**

Status: Submitted
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