

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

Status: Submitted

Last Updated: 08/31/2022 10:04 AM

Technical Review Coversheet

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	20	20
Quality of Project Design		
1. Project Design	30	28
Quality of Project Personnel		
1. Project Personnel	10	9
Quality of the Management Plan		
1. Management Plan	10	10
Quality of the Project Evaluation		
1. Project Evaluation	30	0
Sub Total	100	67
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. Promoting Equity	3	3
Competitive Preference Priority 2		
1. COVID-19	3	3
Sub Total	6	6
Total	106	73

Technical Review Form

Panel #8 - EIR Early Phase - 8: 84.411C

Reader #1: *****

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

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:

Reader's Score: 20

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. (20 points)

Strengths:

The proposed project involves the development of promising strategies for teaching data science that build on existing strategies (project-based learning; culturally responsive and sustaining pedagogy).

The planned strategies are likely to make significant impact on data science skill development of high-needs middle school students and their readiness for STEM careers because the plan is well grounded in strong research evidence as thoroughly explained in the project narrative and also on the evidence form (pp. 20-27; 124-125).

Using real world data from students' communities and their interests are based on not only project-based learning but also responsive to cultures of Black, Indigenous, or Person of Color (BIPOC) students who value contributions back to their own communities (p. 30). This plan of using real world data is likely to sustain student engagement when difficulties arise especially with the planned additional, explicit instruction for their essential math and science learning (p. 30)

The project team's prior work during the 2021-2022 school year with students increases the practical significance of the proposed project in that the prior work demonstrated the practicability of the proposed real world data use through student-generated prototype projects involving social justice issues in the communities and personal interests (p. 23).

Weaknesses:

None noted

Reader's Score: 20

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: 28

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. (10 points)**

Strengths:

The conceptual framework is grounded in strong research evidence on project-based learning and culturally responsive and sustaining pedagogy (p. 20-28).

The application clearly describes the design rationales not only based on the relevant research but also in response to the needs of students. For example, creating data science challenges based on community needs and students' interests is fundamental for project-based learning and culturally responsive and sustaining pedagogy, but also it responds well to the needs of BIPOC students (p. 22).

The project inputs, activities, outputs, and expected outcomes are clearly described in the logic model (p. 23).

Weaknesses:

None noted

Reader's Score: 10

- 2. (2) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable. (5 points)**

Strengths:

The objectives, measures, and data sources are aligned with each other, and other elements described in the application (pp. 28-29). For example, Objective 3 on students' awareness and enthusiasm for STEM pathways will be achieved through the projects that students choose to pursue based on their interests and in consultation with industry STEM professionals.

The plan to address both students and teachers are well explained. For example, Objective 4 on teacher learning is included to enable Objectives 1 through 3 on student learning.

Data planned to be used are aligned with the objectives and measures (pp. 38-41). For example, the measures for Objective 3 include not only student participants' self-reported STEM interest survey but also their high school course and pathway selection that will reflect prolonged interests.

Weaknesses:

The objectives and measures form only lists the number of students that will be exposed to the proposed curriculum (pp. 116-118). Consistency of the form and other descriptions of objectives and measures is needed.

Reader's Score: 4

- 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. (15 points)**

Sub

Strengths:

The application provides detailed information about the target population and their needs. The application clearly describes high needs students (qualifying for free or reduced lunch, or identifying as Black, Indigenous, or Person of Color) who are 80% of the project team's partnering schools (p. 15). The proposed project plans to utilize \$1921 per student to serve 2250 students across 10 schools, 1800 of whom are high needs students (p. 17).

The application clearly identifies the needs for data science learning. That is, the application indicates that Kansas was rated as a D grade and Missouri was rated as a F grade for a lack of data science learning standards by the Data Science for Everyone Coalition at the University of Chicago (p. 20). The application confirms that none of the project team's partner schools offers data science coursework (p. 20).

The design of the proposed project is appropriate to the identified population and needs. Culturally responsive pedagogy will be applied to their project-based learning curriculum into which students' interests and their communities' culturally relevant issues will be integrated while learning data science (p. 24).

Weaknesses:

While the application provides a strong argument for the needs of learning data science, the focus on "developing every student's identity as a data scientist" is not responsive to all students' identify development (p. 15). The curriculum focus can be on all students' learning of data science but it does not have to be on all students' identifying themselves as a data scientist (like math learning is essential but not everyone has to identify themselves as a mathematician, or become or want to become a mathematician).

Reader's Score: 14

Selection Criteria - Quality of Project Personnel

- 1. The Secretary considers the quality of the personnel who will carry out the proposed project. In determining the quality of project personnel, the Secretary considers:**

Reader's Score: 9

Sub

- 1. The extent to which the applicant encourages applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. In addition, the Secretary considers the qualifications, including relevant training and experience, of key project personnel. (10 points)**

Strengths:

The team consists of members with a variety of expertise and experience that are needed for the project (pp. 31-32). For example, Pathways to Technology Facilitator and Chief Curriculum Designer has worked on CS curriculum design including data science. Director Of Community and Industry Partnerships has experience managing partnerships with 200+ business and community organizations.

The application indicates about 60% of the project team are from groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability (p. 31). The team plans to increase the diversity when two data coaches are hired.

Sub

Weaknesses:

The application does not describe methods of diversifying the pool of applicants for the data science coach positions.

Reader's Score: 9

Selection Criteria - Quality of the Management Plan

- 1. The Secretary considers the quality of the management plan for the proposed project. In determining the quality of the management plan, the Secretary considers:**

Reader's Score: 10

Sub

- 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. (10 points)**

Strengths:

The project management plan clearly lays out the project milestones, timelines, and action items (pp. 33-34). The milestones are aligned with the project goals in the project narrative. The responsibilities are clearly defined (pp. 31-33). The 4-year plan for each of the four aspects (management, planning and design, implementation, and evaluation) is aligned with each other and well-thought-out. For example, the enrollment of Cohort 1 in the data science course is planned after the course design as well as teacher recruitment and training (p. 33-34).

Weaknesses:

None noted

Reader's Score: 10

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 with or without reservations as described in the What Works Clearinghouse Handbook (as defined in this notice). (20 points)**

Strengths:

Sub

Weaknesses:

Reader's Score:

2. (2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. (5 points)

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. (5 points)

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 (up to 3 points).

Projects designed to promote educational equity and adequacy in resources and opportunity for underserved students in middle school or high school that examine the sources of inequity and inadequacy and implement responses, including rigorous, engaging, and well-rounded (e.g., that include music and the arts) approaches to learning that are inclusive with regard to race, ethnicity, culture, language, and disability status and prepare students for college, career, and civic life, including one or more of the following:

- (a) Student-centered learning models that may leverage technology to address learner variability (e.g., universal design for learning (as defined in this notice), K–12 competency-based education (as defined in this notice), project-based learning, or hybrid/blended learning) and provide high-quality learning content, applications, or tools.
- (b) Middle school courses or projects that prepare students to participate in advanced coursework in high school.
- (c) Advanced courses and programs, including dual enrollment and early college programs.
- (d) Project-based and experiential learning, including service and work-based learning.
- (e) High-quality career and technical education courses, pathways, and industry-recognized credentials that are integrated into the curriculum.

Strengths:

The proposed project targets middle school students (8th graders in Jackson County, MO and in Wyandotte County, KS; p. 7) and plans to engage them in the data science curriculum that integrates real world problems from the communities. This is to promote educational equity and adequacy in resources and opportunity for high needs students because the overwhelming majority of data scientists are white and male. 80% of the students who will be served through this project are BIPOC (p. 15). The proposed approaches to data science learning are inclusive with regard to race, ethnicity, and culture in that culturally responsive and sustaining pedagogy will be applied in project-based learning.

Weaknesses:

None noted

Reader's Score: 3

Competitive Preference Priority - Competitive Preference Priority 2

1. Competitive Preference Priority 2:

Addressing the Impact of COVID-19 on Students, Educators, and Faculty (up to 3 points).

Projects that are designed to address the impacts of the COVID–19 pandemic, including impacts that extend beyond the duration of the pandemic itself, on the students most impacted by the pandemic, with a focus on underserved students and the educators who serve them through:

(a) conducting community asset-mapping and needs assessments that may include an assessment of the extent to which students, including subgroups of students, have become disengaged from learning, including students not participating in in-person or remote instruction, and specific strategies for reengaging and supporting students and their families; and

(b) using evidence-based instructional approaches and supports, such as professional development, coaching, ongoing support for educators, high quality tutoring, expanded access to rigorous coursework and content across K–12, and expanded learning time to accelerate learning for students in ways that ensure all students have the opportunity to successfully meet challenging academic content standards without contributing to tracking or remedial courses.

Strengths:

The proposed project is designed to address the disproportionate impact of the COVID pandemic on BIPOC students based on the 2021 assessment of Missouri Department of Elementary and Secondary Education and Kansas Department of Education (p. 18). The planned approaches using project-based learning and culturally responsive and sustaining pedagogy are evidence-based and likely to work for the impacted student population (p. 22).

Weaknesses:

None noted

Reader's Score: 3

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Technical Review Coversheet

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	20	20
Quality of Project Design		
1. Project Design	30	30
Quality of Project Personnel		
1. Project Personnel	10	9
Quality of the Management Plan		
1. Management Plan	10	10
Quality of the Project Evaluation		
1. Project Evaluation	30	0
Sub Total	100	69
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. Promoting Equity	3	3
Competitive Preference Priority 2		
1. COVID-19	3	3
Sub Total	6	6
Total	106	75

Technical Review Form

Panel #8 - EIR Early Phase - 8: 84.411C

Reader #2: *****

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

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:

Reader's Score: 20

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. (20 points)

Strengths:

The applicant describes in detail how the proposed project incorporates new strategies while building on existing, well-researched, and evidence-based strategies. The proposed project incorporates project-based learning and culturally responsive and sustaining teaching with the creation of a new data science course that builds math, logic, and technical skills in a relevant, timely, and authentic manner. This proposal demonstrates promise by addressing a need in a way that considers what is best for students while supporting teachers who are new to the implementation. The continuous improvement framework additionally supports the potential success and significance of the project.

Weaknesses:

None noted.

Reader's Score: 20

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: 30

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. (10 points)

Sub

Strengths:

The applicant provides a thorough, connected, and research-based conceptual framework that grounds the project activities with best practices and widely accepted educational theories. By incorporating project-based learning and culturally responsive and sustained teaching, the project seeks to meet the needs of students through a responsible and ethical innovative design that is engaging, interactive, and provides support for participating teachers. A logic model that illustrates the connections amongst inputs, activities, outputs, and short-term, intermediate, and long-term outcomes.

Weaknesses:

None noted.

Reader's Score: 10

2. (2) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable. (5 points)

Strengths:

The applicant provides specific and measurable goals in the appendix that include raw number measures indicating the number of students served and the number of high-need students served. Other data sources include grades and assessment data for Algebra I and Biology, career interest surveys, and Data Analytics Certifications. These measures align with the project description and objectives to increase participation of high-needs students in STEM pathways, increase math and science outcomes for high-needs students, and develop teacher knowledge and proficiencies. Additional related measures and aligned program activities are described in an organized table.

Weaknesses:

None noted.

Reader's Score: 5

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. (15 points)

Strengths:

The applicant identifies the target population by their definition of high needs. Over 80% of the students in their partner school districts identify by this definition, identifying as BIPOC or low-income. For this target population, two specific inequities are described and supported with data and references. The proposed project aims to disrupt these inequities to address the identified needs of the target population. Thus, the project design is specifically aligned to address documented needs and the connection between the needs and project design is well-established.

Weaknesses:

None noted.

Reader's Score: 15

Selection Criteria - Quality of Project Personnel

1. The Secretary considers the quality of the personnel who will carry out the proposed project. In determining the quality of project personnel, the Secretary considers:

Reader's Score: 9

Sub

- 1. The extent to which the applicant encourages applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. In addition, the Secretary considers the qualifications, including relevant training and experience, of key project personnel. (10 points)**

Strengths:

The applicant provides evidence of existing diversity in relation to the project personnel and indicates intent and desire to increase the diversity with the addition of yet-to-be-hired personnel. The titles, roles and responsibilities, experience, and background are provided for the project personnel. These include a school design specialist, two data science coaches, a continuous improvement coach, and a director of community and industry partnerships. This plan provides a detailed and well-organized personnel structure with qualified and experienced staff.

Weaknesses:

The applicant did not describe how they would encourage applications for employment for underrepresented populations. This could include specific recruitment strategies, hiring practices, or other methodologies that demonstrate this commitment.

Reader's Score: 9

Selection Criteria - Quality of the Management Plan

- 1. The Secretary considers the quality of the management plan for the proposed project. In determining the quality of the management plan, the Secretary considers:**

Reader's Score: 10

Sub

- 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. (10 points)**

Strengths:

The applicant provides a detailed and organized management plan that includes project management, planning and design, project implementation, and project evaluation. Each of these includes action items, responsible parties, and milestones that are indicated by year and quarter. The applicant's plan demonstrates the consideration, wisdom, and experience that underlies the proposal and provides the organizational structure for achieving the objectives of the project on time and within budget.

Weaknesses:

None noted.

Reader's Score: 10

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 with or without reservations as described in the What Works Clearinghouse Handbook (as defined in this notice). (20 points)

Strengths:

Weaknesses:

Reader's Score:

2. (2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. (5 points)

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. (5 points)

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 (up to 3 points).

Projects designed to promote educational equity and adequacy in resources and opportunity for underserved students in middle school or high school that examine the sources of inequity and inadequacy and implement responses, including rigorous, engaging, and well-rounded (e.g., that include music and the arts) approaches to learning that are inclusive with regard to race, ethnicity, culture, language, and disability status and prepare students for college, career, and civic life, including one or more of the following:

- (a) Student-centered learning models that may leverage technology to address learner variability (e.g., universal design for learning (as defined in this notice), K–12 competency-based education (as defined in this notice), project-based learning, or hybrid/blended learning) and provide high-quality learning content, applications, or tools.
- (b) Middle school courses or projects that prepare students to participate in advanced coursework in high school.
- (c) Advanced courses and programs, including dual enrollment and early college programs.
- (d) Project-based and experiential learning, including service and work-based learning.
- (e) High-quality career and technical education courses, pathways, and industry-recognized credentials that are integrated into the curriculum.

Strengths:

The applicant demonstrates inequities in research and seeks to increase access and capacity for middle school students. The proposed learning model will utilize high-interest science projects using project-based learning while supporting teachers in their efforts to deliver a rich curriculum to students. The target population is at least 80 percent BIPOC and/or low-income, focusing on the project outcomes and impact on underrepresented student populations.

Weaknesses:

None noted.

Reader's Score: 3

Competitive Preference Priority - Competitive Preference Priority 2

1. Competitive Preference Priority 2:

Addressing the Impact of COVID-19 on Students, Educators, and Faculty (up to 3 points).

Projects that are designed to address the impacts of the COVID–19 pandemic, including impacts that extend beyond the duration of the pandemic itself, on the students most impacted by the pandemic, with a focus on underserved students and the educators who serve them through:

- (a) conducting community asset-mapping and needs assessments that may include an assessment of the extent to which students, including subgroups of students, have become disengaged from learning, including students not participating in in-person or remote instruction, and specific strategies for reengaging and supporting students and their families; and
- (b) using evidence-based instructional approaches and supports, such as professional development, coaching, ongoing support for educators, high quality tutoring, expanded access to rigorous coursework and content across K–12, and expanded learning time to accelerate learning for students in ways that ensure all students have the opportunity to successfully meet challenging academic content standards without contributing to tracking or remedial courses.

Strengths:

The applicant provides specific, documented evidence that the COVID-19 pandemic has disproportionately impacted BIPOC and low-income students in the target populations. The proposed project seeks to close information and social

capital gaps for these students by implementing high-interest projects and project-based learning, engaging students with ongoing interaction, and supporting teachers' capacity and content knowledge for the proposed eighth-grade data science curriculum. The four design elements of the plan are evidence-based instructional strategies that will expand access to STEM coursework for the target population.

Weaknesses:

None noted.

Reader's Score: **3**

Status: Submitted

Last Updated: 08/30/2022 05:34 PM

Status: Submitted

Last Updated: 09/01/2022 08:58 AM

Technical Review Coversheet

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Reader #3: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	20	19
Quality of Project Design		
1. Project Design	30	30
Quality of Project Personnel		
1. Project Personnel	10	9
Quality of the Management Plan		
1. Management Plan	10	10
Quality of the Project Evaluation		
1. Project Evaluation	30	0
Sub Total	100	68
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. Promoting Equity	3	3
Competitive Preference Priority 2		
1. COVID-19	3	3
Sub Total	6	6
Total	106	74

Technical Review Form

Panel #8 - EIR Early Phase - 8: 84.411C

Reader #3: *****

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

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:

Reader's Score: 19

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. (20 points)

Strengths:

This project builds on the existing strategies of Project Based Learning and Culturally Responsive and Sustaining Teaching by creating a new data science curriculum for 8th graders. This new curriculum will integrate statistics, algebra, computer science, and communication.

Students will take ownership in their student selected projects due to the focus on solving challenges in their communities. Furthermore, students will see themselves in the STEM professionals who grew up in the students' communities.

Weaknesses:

The applicant did not provide significant details of the curriculum that has yet to be written.

Reader's Score: 19

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: 30

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. (10 points)

Sub

Strengths:

The applicant provided a detailed logic model to provide data science education that meets the academic, social, and college and career planning needs for 8th graders.

Compensating teachers \$35 for 200 hours of training will motivate teachers to complete the training need to implement this project.

Weaknesses:

No weakness noted.

Reader's Score: 10

2. (2) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable. (5 points)

Strengths:

The applicant presented a detailed objective table listing Measures, data sources and activities. For example, to measure student understanding of the data science process the applicant will use the Tableau Certification Exam with an activity of implementing student projects.

The applicant will employ a Continuous Improvement Coach to gauge progress towards its goals and implementation strategies based on formative data.

Weaknesses:

No weakness noted.

Reader's Score: 5

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. (15 points)

Strengths:

This new class will be in addition to the traditional Algebra I class. By reinforcing math concepts students will be more likely not bottleneck at Algebra I and pursue future STEM classes.

This innovative project will appeal to High-needs students, and they will be more likely to engage in early STEM interactions.

Weaknesses:

No weaknesses noted.

Reader's Score: 15

Selection Criteria - Quality of Project Personnel

1. The Secretary considers the quality of the personnel who will carry out the proposed project. In determining the quality of project personnel, the Secretary considers:

Reader's Score: 9

Sub

- 1. The extent to which the applicant encourages applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. In addition, the Secretary considers the qualifications, including relevant training and experience, of key project personnel. (10 points)**

Strengths:

The project team is diverse and includes underrepresented members to implement this project. For example, over 60% of the team is female and 38% of the team belong to other traditionally underrepresented groups. The applicant will seek to further diversify the staff. The team has K12 teaching experience as well as curriculum design and has the experience to implement this project.

Weaknesses:

The applicant did not clearly present how they encourage applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability.

Reader's Score: 9

Selection Criteria - Quality of the Management Plan

- 1. The Secretary considers the quality of the management plan for the proposed project. In determining the quality of the management plan, the Secretary considers:**

Reader's Score: 10

Sub

- 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. (10 points)**

Strengths:

The applicant provided a detailed table defining responsibilities, timelines, and milestones table for the five years of this project. For example, Data Science content Professional Development will occur in the winter and spring and is the responsibility of the Design Team Lead.

Weaknesses:

No weakness noted.

Reader's Score: 10

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 with or without reservations as described in the What Works Clearinghouse Handbook (as defined in this notice). (20 points)

Strengths:

Weaknesses:

Reader's Score:

2. (2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. (5 points)

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. (5 points)

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 (up to 3 points).

Projects designed to promote educational equity and adequacy in resources and opportunity for underserved students in middle school or high school that examine the sources of inequity and inadequacy and implement responses, including rigorous, engaging, and well-rounded (e.g., that include music and the arts) approaches to learning that are inclusive with regard to race, ethnicity, culture, language, and disability status and prepare students for college, career, and civic life, including one or more of the following:

(a) Student-centered learning models that may leverage technology to address learner variability (e.g., universal design for learning (as defined in this notice), K–12 competency-based education (as defined in this notice), project-based learning, or hybrid/blended learning) and provide high-quality learning content, applications, or tools.

(b) Middle school courses or projects that prepare students to participate in advanced coursework in high school.

(c) Advanced courses and programs, including dual enrollment and early college programs.

(d) Project-based and experiential learning, including service and work-based learning.

(e) High-quality career and technical education courses, pathways, and industry-recognized credentials that are integrated into the curriculum.

Strengths:

Data scientist is a growing field that does not currently attract diverse students. This project will increase underrepresented minorities into the field of data science through its engaging curriculum.

Weaknesses:

No weakness noted.

Reader's Score: 3

Competitive Preference Priority - Competitive Preference Priority 2

1. Competitive Preference Priority 2:

Addressing the Impact of COVID-19 on Students, Educators, and Faculty (up to 3 points).

Projects that are designed to address the impacts of the COVID–19 pandemic, including impacts that extend beyond the duration of the pandemic itself, on the students most impacted by the pandemic, with a focus on underserved students and the educators who serve them through:

(a) conducting community asset-mapping and needs assessments that may include an assessment of the extent to which students, including subgroups of students, have become disengaged from learning, including students not participating in in-person or remote instruction, and specific strategies for reengaging and supporting students and their families; and

(b) using evidence-based instructional approaches and supports, such as professional development, coaching, ongoing support for educators, high quality tutoring, expanded access to rigorous coursework and content across K–12, and expanded learning time to accelerate learning for students in ways that ensure all students have the opportunity to successfully meet challenging academic content standards without contributing to tracking or remedial courses.

Strengths:

This project includes face to face interactions with mentors and includes projects outside of the classroom and in the community. This project is in addition to the current algebra class which will provide reinforcement of math concepts that students missed due to being disengaged from learning during the pandemic.

Weaknesses:

No weakness noted.

Reader's Score: 3

Status: Submitted

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Technical Review Coversheet

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	30	21
Total	30	21

Technical Review Form

Panel #2 - EIR Tier 2 - 2: 84.411C

Reader #1: *****

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Questions

Selection Criteria - Quality of the Project Evaluation

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:

Reader's Score: 21

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 with or without reservations as described in the What Works Clearinghouse Handbook (as defined in this notice). (20 points)

Strengths:

The evaluation plan utilizes a student-level randomized design which has the potential to produce evidence about the project's effectiveness based on What Works Clearinghouse (WWC) standards without reservations (p. e34). The definition of high-need student is stated (p. e15). Minimum detectable effect sizes (MDES) are computed (p. e39). The evaluation plan states that the differential attrition rates will be computed and reported (p. e39). The use of covariates and methods used to handle missing data (dummy variable approach) is discussed in the evaluation plan (p. e40 and e41).

Weaknesses:

The evaluation plan provides limited discussion on the specific strategies used to reduce attrition-related bias based on WWC standards (p. e39). The source of MDRC Organization's study that was used to estimate the overall attrition rate of 20% to 25% is not provided (p. e39). There is no discussion on risk of bias. Furthermore, no data are provided on the historic migration rates of the 10 schools included in the sample that could potentially lead to attrition-related bias (p. e39). The evaluation plan does not state if the baseline group differences based on covariates will be less than or more than 0.25 standard deviations according to WWC standards (p. e38). The sample size for the summative phase, implementation study, impact study (blocked random design-p. e40) is not stated. The evaluation plan lacks specific details on the criterion used to select teachers to teach the data science course. The sample size for teachers is not addressed. The proposal states different sample sizes. For example, 10 schools and 2,250 students are stated on p. e17, but the sample size number become 1,500 (10 schools with 150 students per school) on p. e39. The impact analysis does not address the methods to handle missing data for continuous variables (for example, assessment scores). There is no discussion on missing data analysis to be used for continuous variables.

Reader's Score: 15

2. (2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. (5 points)

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Strengths:

Table 1 provides an overview of the outcome measures and data sources based on the research questions (p. e36 and e.37). The applicant proposes to use multiple measures for student and teacher outcomes and longitudinal tracking of data collection items, which is likely to increase the validity of the performance feedback and periodic assessment. The evaluation team will provide memos in fall and spring semester to the project personnel. The memos will provide results of data collection conducted in the formative phase (p. e35). The management plan describes the key activities in each phase of the project (p. e33 and e34). The evaluation team will share the project findings via monthly phone calls (p. e35). The project management plan proposes to hold monthly team meetings (table-p. e33).

Weaknesses:

The evaluation plan does not offer a clear discussion on the measures that will be developed and pilot tested, and the measures that are tested for validity and reliability (p. e35). The project does not provide details on the cost per student calculations based on sample size of 2,250 students (p. e17) which is different than the sample size of 1,500 students in the evaluation plan (p. e39). The constructs of data literacy, student's identity as a data scientist and social capital are described in the introduction and priorities section but not further addressed in the project evaluation plan (p. e17). The logic model states that the amount of interaction with data science professionals and amount of professional development for teachers are outputs, but these outputs are not clearly measurable in the evaluation plan (p. e23). The measures used for inter-observer agreement ratings for the qualitative data collection measures (interviews and classroom observations- p. e36) and analytical methods are not described in the evaluation plan. The evaluation plan does not clearly discuss the methods that will be used to integrate the quantitative and qualitative data to answer the research questions. The applicant does not provide sufficient evidence that one faculty member from each school will be able to teach data science to 150 8th grade students (as stated on p. e39 within MDES section) per school, which might influence the student's learning and engagement. This could impact the teacher as well as student-level outcomes and influence the periodic assessment of progress (p. e27).

Reader's Score: 3

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. (5 points)

Strengths:

The evaluation plan poses separate research questions for the mediators and moderators in Table 4 (p. e40). The mediators and moderators are stated in the evaluation plan (p. e41). The plan to analyze the effect of mediator and moderator is clearly discussed (p. e43). The evaluation plan states that fidelity thresholds will be established from the formative phase (p. e41).

Weaknesses:

The proposal provides no discussion on the alignment of Biology standards to the concepts covered in the data science course which could influence the outcome measures in the evaluation plan. Furthermore, the proposal does not demonstrate that the personnel on the curriculum design team have experience in the science content area (p. e32). This makes it difficult to assess the alignment of the concepts taught in the data science course to the biology state assessment standards which has the potential to impact student's science outcomes in the evaluation plan. The project evaluation plan does not clearly describe the steps to calculate overall measures of treatment fidelity (p. 25). The specific details of analytical framework that will be used to analyze the quantitative and qualitative data elements as well as the mediators and moderators is not addressed in the evaluation plan. The proposal does not provide discussion of strategies that will be implemented to adjust the teacher's existing school workload in spring semesters so they can attend the intensive project-based and culturally responsive training (40 hours of pre-service and 52 hours in-service per year- p. e27). The evaluation plan lacks specific details on the data collection measures and outcomes associated with involvement of subject matter experts (p. e26), interaction between students and

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data science professionals from industry, and activities of community networks and partnerships (p. e24 and e. 25).
For example, tracking the student presentations and publications related to data science projects (p. e25).

Reader's Score: **3**

Status: Submitted

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Technical Review Coversheet

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	30	24
Total	30	24

Technical Review Form

Panel #2 - EIR Tier 2 - 2: 84.411C

Reader #2: *****

Applicant: Partnership for Regional Educational Preparation-Kansas City (S411C220077)

Questions

Selection Criteria - Quality of the Project Evaluation

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:

Reader's Score: 24

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 with or without reservations as described in the What Works Clearinghouse Handbook (as defined in this notice). (20 points)

Strengths:

If well implemented, the randomized control trial (RCT) research study should produce evidence about the project's effectiveness that would meet the What Works Clearinghouse (WWC) standards without reservations (e35-41). The study will utilize two cohorts over about a two-and-a-half year period (e35), allowing any mistakes made in the first round to be corrected in the second round. There will be 10 schools involved with 150 students from each school (e39). Students will be randomly assigned within each school to either the curricular intervention group or the control group. There is a helpful description of ensuring baseline equivalence, including the characteristics used in matching (e38-39). Other important features of the RCT are described in sufficient detail, including how attrition will be handled (e39), the minimum detectable effect size (e39-40), and details about the analytic approach (regression) (e40-41).

The five research questions associated with the RCT study are appropriate to the proposed intervention (e36-37). Most of the outcome measures are suitable and make use of objective descriptive data such as grades, scores on state assessments, or completion of a data science certification (e36-37).

Weaknesses:

It is unclear how baseline equivalence will be assured. This is an important omission as it is required for WWC compliance.

STEM awareness is one of the seven outcome measures, and the source of data is a student survey (e37). Information about this survey is unclear: in the narrative it is described as a single survey. In the footnote, it seems to indicate it is drawn from at least two measures, neither of which appear to be related to STEM awareness. Adding to the confusion, on page e28, it is called a "Career Interest Survey".

It is unclear how much expertise the two evaluators have regarding prior work with the What Works Clearinghouse requirements. There are two concerns here about whether the evaluators have enough prior experience with RCT studies. One concern is that it is unclear if they were appropriately trained in RCT methods and analysis, as their

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terminal degrees are master's degrees (Appendix B). A second concern is that although they both have conducted prior RCT studies, it is not clear if these prior studies were methodologically valid and conducted appropriately, as none of them have been published in a peer-reviewed journal (Appendix B).

It is unclear if the full objectives of completing the two RCT studies is achievable, as the level of effort put into the project by the two evaluators is unclear (e103).

Reader's Score: 16

2. (2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. (5 points)

Strengths:

This proposal has a very strong approach toward formative evaluation. The methods should provide valuable performance feedback and permit regular assessment of progress toward achieving the desired outcomes. The applicant will develop and refine the course materials, teacher training, and coaching during the planning year and pilot these components during the first year of implementation (e33-34). Then there are two phases of implementation and further formative data collection through fidelity of implementation data collection protocols (e34). The evaluator and the continuous improvement coach will share findings from the formative work with the applicant on an ongoing basis through monthly phone calls (e35).

One particular strength is the use of a Continuous Improvement Coach (CIC) to support the process, who is not a member of the outside evaluator's organization (e29). The CIC will collect formative data about the program's usability, feasibility, and fidelity (e35). The CIC will work with the project evaluators to lead formative data collection efforts, including learning walks, training observations, interviews with staff delivering and taking the training, and end-of-training surveys. The CIC will also gather formative feedback regularly, observe the fidelity of implementation, and produce annual reports.

Weaknesses:

One of the four design elements is Element 3: "Ongoing interaction with industry professionals" (e25-26). It is unclear how this objective will be formatively evaluated, including the data sources or timetable.

"Learning walks" are to be used as a data source for the formative evaluation (e29). It is unclear how these would be conducted, by who, and how they would be analyzed.

The CIC is not yet hired (e32). It is unclear what the job description is, and what degree of education, experience, or expertise is required to fulfill the duties. The responsibilities as listed on page e32 are overly abbreviated, making it difficult to determine precisely what the entire role of the CIC will be.

Reader's Score: 4

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. (5 points)

Strengths:

The logic model provides an overview of the program components (e95) and outcomes. These are consistent throughout the narrative and evaluation plan. Each component is clearly articulated (e15, e28-29, e33-34, e95) as are the sources of data (e28-29, e36-37).

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Both mediators and moderators are discussed and are described in relation to the data analysis methodology (e41).

The applicant proposes to use the initial phase to refine the logic model and inform the development of a framework for measuring fidelity. The applicant states that the framework will include indicators that measure adherence to activities in the logic model and a priori benchmarks for acceptable implementation overall (e41).

Weaknesses:

One mediator discussed in the narrative is the role of data science skills in increasing math and science achievement (e23-24, e28, e95). Data science skills are not included in the summative evaluation.

The process by which the applicant and its partners will refine the logic model and inform the development of a framework for measuring fidelity is not made entirely clear (e41). As such, it is difficult to discern if they will have measurable thresholds for acceptable implementation.

Reader's Score: **4**

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