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

Technical Review Coversheet

Applicant: Urban Arts Partnership (S411C230153)
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	10
Quality of the Management Plan		
1. Management Plan	10	10
Sub Total	70	68
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. Promoting Equity	5	5
Competitive Preference Priority 2		
1. Workforce Diversity	2	0
Sub Total	7	5
Total	77	73

Technical Review Form

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

Applicant: Urban Arts Partnership (S411C230153)

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 factor:

Reader's Score: 20

    Sub

    1. **(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 has had success with developing computer science courses for the high school level. This proposal will build on the existing strategies including game design and art integrated instruction, which have a high success rate among historically underrepresented students (p. e22). The applicant states 84% of students enrolled in their program have passed the AP computer science principles exam compared to 67% of all students taking the exam (p. e21).

      Weaknesses:

      No weaknesses found.

      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 applicant provides a conceptual framework and logic model that is well-developed and aligned with the program goals and activities. Each component of the conceptual framework is based on established field practices;

Elements of Effective Professional Development (Darling-Hammond, 2017), Game Design (Fowler et al, 2016, Weitze, 2017), and Culturally Responsive Teaching (Hammond, 2015; Muniz, 2019; Paris et al, 2017) (pgs. e22-e27).

Weaknesses:

No weaknesses found.

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 goals and objectives listed in the proposal are appropriate for the activities proposed (Table 6, pge28). The proposed objectives are measurable and specifically relate to increasing student knowledge of and interest in computer science. All four goals correspond directly to Absolute Priority 3; Promoting Equity in Student Access to Educational Resources and Opportunities: STEM. For example, "Goal 1: There is an increase in the number of CS classes offered by schools" (p. e28).

Weaknesses:

No weaknesses found.

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 target population indicated in the proposal meets the benchmark for Absolute Priority 3. For example, "over 85% of students in the schools we serve are economically disadvantaged, 91% are Hispanic or Black" (p. e29).

Weaknesses:

While the applicant intends to serve underrepresented students by situating their program in high needs schools, there was no specific plan to recruit underrepresented students within those schools. For example, it is not clear how the applicant will ensure that typically overserved students are not solely enrolling in the Computer Science course.

Reader's Score: 13

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 the following factor:**

Reader's Score: 10

Sub

1. **(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 proposed personnel have extensive experience in projects of this scope. The Project Director has 15 years' experience in STEM education and the Curriculum Developer is part of the Minecraft creation team (Minecraft is the program proposed in the course, p. e31). In addition, 59% of the applicants' employees are BIPOC (p. e31).

    Weaknesses:

    No weaknesses found.

        Reader's Score: 10

Selection Criteria - Quality of the Management Plan

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

Reader's Score: 10

    Sub

1. **(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.**

    Strengths:

    The applicant provides a 5-year timeline that includes activities, responsible parties, and milestones (Table 8, pgs. e34-e35). In addition, the applicant delineates the staff responsible for each part of the proposal (Table 7, p. e33). For example, the Urban Arts curriculum team will "create curriculum guides; create asynchronous PL resources; monitor and implement program and curriculum improvements; instruct teachers, participates in dissemination activities" (p. e33).

    Weaknesses:

    No weaknesses found.

        Reader's Score: 10

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:

CU New York meets the requirement of a Minority Serving Institution as listed in the US Department of Education 2023 eligibility matrix. Since City College of New York (a partner organization) falls under the CU New York umbrella the requirements for this priority have been met.

Weaknesses:

No weaknesses found.

Reader's Score: 5

Competitive Preference Priority - Competitive Preference Priority 2

1. Competitive Preference Priority 2:

Supporting a Diverse Educator Workforce and Professional Growth to Strengthen Student Learning (up to 2 points)

Projects that are designed to increase the proportion of well-prepared, diverse, and effective educators serving students, with a focus on underserved students, through building or expanding high-poverty school districts' capacity to hire, support, and retain an effective and diverse educator workforce, through adopting or expanding comprehensive, strategic career and compensation systems that provide competitive compensation and include opportunities for educators to serve as mentors and instructional coaches, or to take on additional leadership roles and responsibilities for which educators are compensated.

Strengths:

Applicant did not address this priority.

Weaknesses:

Applicant did not address this priority.

Reader's Score: 0

Status: Submitted
Last Updated: 09/15/2023 03:46 PM

Technical Review Coversheet

Applicant: Urban Arts Partnership (S411C230153)
Reader #2: **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	20	18
Quality of Project Design		
1. Project Design	30	30
Quality of Project Personnel		
1. Project Personnel	10	10
Quality of the Management Plan		
1. Management Plan	10	10
Sub Total	70	68
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. Promoting Equity	5	5
Competitive Preference Priority 2		
1. Workforce Diversity	2	0
Sub Total	7	5
Total	77	73

Technical Review Form

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

Applicant: Urban Arts Partnership (S411C230153)

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 factor:

Reader's Score: 18

   Sub

   1. **(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 is based off of Creative Coders, a high school computer science program that will now be conducted in middle school via video game design. The teachers will have professional development opportunities to support them in teaching this course using a rigorous curriculum and pedagogical approach. This program is built on previous research using proven successful practices. (e18) This is important since K-12 computer science courses are gradually being required nationwide. There is a demand for high-quality introductory computer science curricula. There is evidence that using game design is effective in helping to learn computer science concepts and increases their likelihood of participation in Science, Technology, Engineering, and Math, (STEM)related studies. (e21) This will also support thinking skills and computer science principles at both secondary and post-secondary levels. This project is aligned toK-12 Computer Science standards for middle grades and the Big Ideas from College Board Advance Placement Computer Science Principles framework (e20)

      Weaknesses:

      The applicant did not provide a clear rationale for the professional development time needed for teachers, For example, 30 hours of PL workshops and 5 asynchronous modules are required, however, they have not provided proof regarding the sufficiency of this amount of time. (e20)

      Reader's Score: 18

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)**

    Strengths:

    The conceptual framework for this project is unique in using game design and an arts-integrated focus and is accessible on Chromebooks. This project adapts Urban Arts high school Computer Science curriculum in a middle school setting using a beta version of Game Code. (e25) Creative coders are aligned to Computer Science Teachers Association (CSTA) K-12 National Standards for grades 6-8 and aligned with New York State Computer Science and digital fluency learning standards and the California Computer Science Content Standards. (e20)

    Weaknesses:

    No weaknesses 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:

    There are four clear goals that address access to computer science education and student achievement outlined in Table 6. (e28) Goal 2 that is focused on student achievement states that students will complete 108 hours of an introductory Computer Science course which is directly correlated with outcome 2 in which 80% of students will have significant improvement in their Middle
    Grades Computer Science Concept (MG-CSCI) Inventory Assessment scores. (e28)

    Weaknesses:

    No weaknesses 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 design of the proposed project addresses the needs of the target population. In the schools that will participate with Creative Coders the vast majority of students belong to groups that are underrepresented in technology-related careers. District 6 is located in Washington Heights where about one in four households have limited English proficiency. More than 85 % of students are economically disadvantaged, more than 90% are Hispanic, or Black, and about a third are not able to meet proficiency on standardized math tests. (e29)

    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 the following factor:**

Reader's Score: 10

   Sub

1. **(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:

Urban Arts encourages a diverse working environment. For example, their full time staff demographics are currently 59% Black, Indigenous, People of Color (BIPOC) and the full time game design instructors are 80% Black, Indigenous, People of Color (BIPOC) and 60% female-identifying.(e31) This is important to have staff members that represent the students that are the target population.
 The staff have relevant training. For example, the curriculum developer and learning facilitator is a Mogjan Studios (creator of Minecraft) content creator. There are also experts in curriculum writing for Minecraft education and STEM.(e31)

   Weaknesses:

No weaknesses noted.

   Reader's Score: 10

Selection Criteria - Quality of the Management Plan

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

Reader's Score: 10

   Sub

1. **(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.**

   Strengths:

The management plan for the proposed project is very clear. It starts with Table 7 (e3) which designates Creative Codes and Responsibilities. For example, the Program Team is responsible for creating curriculum guides and asynchronous PL resources, instructing teachers, etc. This plan is contingent on feedback and continuous improvement based on that feedback so regularly scheduled meetings have been designated. For example, the program team will meet biweekly to review project progress, identify challenges, and make adjustments to implementation sharing input from both teachers and students. (e34)

    Weaknesses:

No weaknesses noted

    Reader's Score: **10**

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:

   This plan addresses partnerships as it will continue the Urban Arts partnership with the City College of New York which is federally designated as a minority- and Hispanic-serving institution

   Weaknesses:

   No weaknesses noted.

Reader's Score: **5**

Competitive Preference Priority - Competitive Preference Priority 2

1. **Competitive Preference Priority 2:**

   Supporting a Diverse Educator Workforce and Professional Growth to Strengthen Student Learning (up to 2 points)

   Projects that are designed to increase the proportion of well-prepared, diverse, and effective educators serving students, with a focus on underserved students, through building or expanding high-poverty school districts' capacity to hire, support, and retain an effective and diverse educator workforce, through adopting or expanding comprehensive, strategic career and compensation systems that provide competitive compensation and include opportunities for educators to serve as mentors and instructional coaches, or to take on additional leadership roles and responsibilities for which educators are compensated.

   Strengths:

   The applicant did not address this priority.

Weaknesses:

The applicant did not address this priority.

Reader's Score: **0**

Status: Submitted

Last Updated: 09/15/2023 01:03 PM

Technical Review Coversheet

Applicant: Urban Arts Partnership (S411C230153)
Reader #3:   **********

		Points Possible	**Points Scored**
Questions			
Selection Criteria			
Significance			
1. Significance		20	19
Quality of Project Design			
1. Project Design		30	27
Quality of Project Personnel			
1. Project Personnel		10	10
Quality of the Management Plan			
1. Management Plan		10	7
	Sub Total	70	63
Priority Questions			
Competitive Preference Priority			
Competitive Preference Priority 1			
1. Promoting Equity		5	5
Competitive Preference Priority 2			
1. Workforce Diversity		2	0
	Sub Total	7	5
	Total	77	68

Technical Review Form

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

Applicant: Urban Arts Partnership (S411C230153)

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 factor:

Reader's Score: 19

    Sub

  1. **(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 upon a successful high school computer science program. This project introduces a rigorous introductory computer science curriculum and a comprehensive professional learning framework in middle schools. Implementing this initiative at the middle school level, will impact students prior to historically underserved populations potentially losing interest in the subject. (e20)

    This project aims to incorporate culturally responsive teaching by utilizing video games, which hold immense popularity among middle school students, as a vehicle for teaching computer science. The objective is to enhance academic achievement and promote better attendance. (e21)

    Weaknesses:

    It is unclear if the applicant's plan is promising. For example, the applicant conducted a comparison between the pass rates on the AP Computer Science Principles exam of students who participated in UA's after-school program and those who took the test without any involvement in the volunteer program. It remains unclear whether the elevated pass rate can be attributed to the characteristics of students inclined to enroll in an after-school computer science program or the program's inherent effectiveness. Moreover, there is a lack of clarity regarding the precise number of students involved in this after-school program who have taken the test. (e21)

    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: 27

    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 applicant provides a conceptual framework that includes Creative Coders to modify Urban Arts' effective high-school computer science curriculum to suit a middle school environment. This curriculum incorporates unplugged, art-focused activities within the Minecraft Education platform. (e25)

   This project adheres to the Computer Science Teachers Association National Standards for Level 2 Computer Science, as well as the New York State Computer Science and Digital Fluency Learning Standards, along with the California Computer Science Content Standards. Furthermore, the professional development aligns with the conclusions drawn by Darling-Hammond. (e26)

   Weaknesses:

   No weaknesses 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 provided a clear articulation of the objectives and the method for measuring outcomes. For example, they outlined a goal of completing 108 hours of an Introductory computer science course, and the impact on students will be gauged through the assessment scores from the Middle Grades Computer Science Concept Inventory. (e28)

   Weaknesses:

   No weaknesses 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 initiative will be executed in schools where the student body predominantly comprises individuals underrepresented in technology-related professions, and these schools also qualify as Title I institutions. (e29)

   The applicant employs cost-effective resources, such as Chromebooks, to alleviate the financial obstacles to accessibility for students enrolled in Title I schools. (e30)

   The applicant draws underrepresented minorities into the field of computer science through a culturally responsive emphasis on game design, utilizing the Minecraft platform and its integrated approach involving the arts. (e31)

Sub

Weaknesses:

The applicant does not provide a specific strategy for actively involving women in the field of computer science.

Reader's Score: 12

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 the following factor:

Reader's Score: 10

Sub

1. **(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:

   At Urban Arts, the current composition of full-time staff demographics stands at 59% Black, Indigenous, People of Color. Furthermore, among game design instructors, 80% are from Black, Indigenous, People of Color backgrounds, with 60% identifying as female. (e31).

   The staff members possess the necessary qualifications to complete this grant effectively. For example, the project director brings over 15 years of experience in STEM education, while the Curriculum Developer and Learning Facilitator is the creator of Minecraft. (e32)

   Weaknesses:

   No weaknesses noted.

Reader's Score: 10

Selection Criteria - Quality of the Management Plan

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

Reader's Score: 7

Sub

1. **(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.**

Strengths:

The applicant provides a general overview of the project staff's responsibilities. As an illustration, the senior leadership team ensures that resources from Urban Arts are harnessed to facilitate the project's successful execution. Additionally, the applicant offers a broad outline of the timeline for achieving major milestones. (e33)

Weaknesses:

The applicant's explanation of roles and responsibilities lacks clarity and specificity. For instance, there is a lack of clear differentiation between the duties of the United Artist's Chief Executive Officer, Chief Operating Officer, and Chief Produce Officer. For example, while it is mentioned that the senior leadership team is tasked with providing financial and logistical oversight to ensure the grant's goals are met efficiently and within budget, it does not specify the distinct roles and responsibilities of each member within the leadership team. (e33)

The applicant did not provide a clear delineation of the individuals responsible for carrying out tasks within the timeline for significant milestones. For example, the timeline utilized quarters instead of specifying actual dates. (e34)

Reader's Score: 7

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:

    Creative Coders has a partnership with the City College of New York, which is federally designated as a Minority- and Hispanic-Serving Institution. (e21)

    Creative Coders intends to implement this grants in minority-serving institutions. For example, in prior work, the applicant had 91% of their mastery students from low-income communities, 92% students of color, 50% female-identifying, and 10-14% identifying as LGBTQ+.(e30)

    Weaknesses:

    No weaknesses noted.

Reader's Score: 5

Competitive Preference Priority - Competitive Preference Priority 2

  1. **Competitive Preference Priority 2:**

  **Supporting a Diverse Educator Workforce and Professional Growth to Strengthen Student Learning
  (up to 2 points)**

  **Projects that are designed to increase the proportion of well-prepared, diverse, and effective educators serving
  students, with a focus on underserved students, through building or expanding high-poverty school districts'
  capacity to hire, support, and retain an effective and diverse educator workforce, through adopting or expanding
  comprehensive, strategic career and compensation systems that provide competitive compensation and include
  opportunities for educators to serve as mentors and instructional coaches, or to take on additional leadership
  roles and responsibilities for which educators are compensated.**

  Strengths:

  Did not address.

  Weaknesses:

  Did not address.

Reader's Score: 0

Status: Submitted

Last Updated: 09/15/2023 10:18 AM

Technical Review Coversheet

Applicant: Urban Arts Partnership (S411C230153)
Reader #1: **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	30	23
Sub Total	30	23
Total	30	23

Technical Review Form

Panel #8 - Early-phase Tier II Panel - 8: 84.411C

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

Applicant: Urban Arts Partnership (S411C230153)

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: 23

>   **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 applicant presents a very good plan for conducting an evaluation of the project's effectiveness. The plan includes the use of a cluster randomized controlled trial that will randomly assign 36 middle schools to the treatment condition and 36 middle schools to the business-as-usual comparison condition during the year of the impact study (e37). This method of assigning schools to condition is consistent with the requirements to be eligible to meet What Works Clearinghouse (WWC) standards without reservations. Plans include collecting data from approximately 1,800 students, which is a sample large enough to be able to detect even a small standard deviation difference between students in each condition as demonstrated by their detailed power analysis (e97). The plan also meets WWC requirements for ensuring that students joining schools after random assignment do not introduce bias into the analytic sample by not including them in the analyses (e39). While not a specific requirement of a randomized control trial, the applicant plans to collect baseline measures necessary to establish baseline equivalence on all covariates and to make statistical adjustments, if necessary (e39). Hierarchical linear modeling will be used to estimate the effect of the treatment, and this statistical method will adjust for the nesting of students within schools as required by the WWC (e98). The missing data procedures that are specified are allowable under WWC requirements, and the applicant provides a rationale for the use of each procedure depending on the level of missing data (e100). For example, if missing data is minimal, listwise deletion will be used (e100). Several promising strategies will be used to minimize attrition, including providing each teacher with a $2,000 stipend to participate in the impact study (e119). An external evaluation team will conduct the evaluation and ensure that the effectiveness estimates are a result of a process that did not include the influence of project developers, and each member of the team has extensive experience in conducting large-scale evaluations with many measurement components (e32-e33).

>   **Weaknesses:**

>   The applicant failed to present reliability information for several of the measures that will be used in the impact analyses. Specifically, reliability information is not provided for the measure designed to assess growth mindset or student awareness of and interest in a STEM-related (science, technology, engineering, mathematics) field (e37-38). In addition, the applicant identifies plans for creating factor scores from survey items but does not discuss whether these factor scores are likely to have the same reliability as the original scales with the cited reliability

statistics to ensure that they are at least as reliable as the original survey scales (e101). An additional weakness of the plan is the reliance on one teacher per school site, due to the potential for greater than anticipated attrition (e97). The impact evaluation is based on original data collections (surveys and special assessments) which must be obtained directly from students in lieu of standardized assessments that can be obtained from administrative data, which presents a design that is sensitive to attrition. Cluster attrition will occur if a teacher chooses to not participate, since each cluster is represented by only one teacher. In this case, all student outcomes also will be lost to attrition even if the school leadership is still interested in participating.

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:

The project presents a good design for taking the project through a series of iterations to ensure that there are many opportunities to provide performance feedback and permit periodic assessment of progress toward achieving the intended outcomes. Specifically, prior to the evaluation phase, the project will collect feedback from several earlier cohorts during a professional learning phase (focused on usability), a supported implementation phase (focused on feasibility), and a mastery implementation phase (e25). Each phase is designed to collect different data and these data will inform the next iteration of the project design. This strategy makes use of multiple measures at multiple time points, which is an effective approach. The multiple measures will include both qualitative and quantitative data measures which allows for a mixed-methods approach to providing performance feedback. For example, during the usability phase, teachers will be asked to conduct "think aloud" exercises and participate in feedback interviews to determine their overall experiences and their satisfaction with the materials (e41), and teacher logs and classroom observations will be used during the feasibility study to capture whether teachers are able to translate the materials into practice as designed (e42). All phases will be monitored closely, and feedback will be incorporated into the project using biweekly progress meetings and monthly Co-Principal Investigator meetings (e34). In addition, an annual research report will be written to summarize overall progress in a formal fashion (e34).

Weaknesses:

The applicant notes that qualitative and quantitative reports of findings will provide actionable recommendations to the project team but does not clearly explain how the data will be summarized to accomplish this intention (e42). There are many data sources that will be collected at many time points, but it is not clear what strategy will be used to ensure a proper approach to analyzing data within an appropriate mixed-methods framework. It is a weakness not to identify a solid approach for analyzing data in a mixed-methods framework, including how qualitative data will be systematically analyzed in combination with the quantitative data sources.

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 presents a clear conceptual framework for both the project and the evaluation activities (e20). It provides an aligned depiction of the key project inputs, activities, outputs, and outcomes that also matches the conceptual framework presented in the proposal discussion. The mediation analyses are adequately detailed and will be guided by two clearly articulated research questions (e36). Specifically, the evaluation will estimate the extent to which the student outcomes are mediated by instructional activities and fidelity of implementation. The evaluation outcomes are consistent with the student outcomes identified in the logic model (i.e., students' computer science achievement, attitudes around coding, and related constructs like growth mindset) (e37).

Sub

Weaknesses:

The applicant does not provide any potential thresholds for teacher implementation of the treatment to allow for an understanding of the level of instruction that is required for acceptable implementation beyond just participating in professional development opportunities. They will be developed during the formative stages of the project (e40). Therefore, the threshold(s) for acceptable implementation could not be evaluated.

Reader's Score: 3

Status: Submitted
Last Updated: 09/28/2023 10:47 AM

Status: Submitted
Last Updated: 09/29/2023 09:34 AM

Technical Review Coversheet

Applicant: Urban Arts Partnership (S411C230153)
Reader #2: **********

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of the Project Evaluation		
1. Project Evaluation	30	20
Sub Total	30	20
Total	30	20

Technical Review Form

Panel #8 - Early-phase Tier II Panel - 8: 84.411C

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

Applicant: Urban Arts Partnership (S411C230153)

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: 20

    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 impact study involves a cluster randomized controlled trial in 72 middle schools, half of whom will use the Creative Coders curriculum and half of whom will teach business-as-usual (e36-e37). The impact study is powered to detect an effect size of .09 to .10 (e37, e97), and will involve rigorous and appropriate hierarchical linear models to conduct an intent-to-treat analysis (e39, e98). Attrition and baseline equivalence will be examined as well (e39). Appropriate plans are in place for handling missing data including using multiple imputation if the amount of missing data exceeds What Works Clearinghouse (WWC) thresholds (e100).

   Overall, the impact study seems well planned and that likely would meet WWC standards with or without reservations.

   Weaknesses:

   The application provides little detail about one of the main outcome measures, student growth mindset, including no information about the reliability of this measure (e37). The use of one teacher per school could substantially hurt statistical power if there is teacher attrition as this would result in loss of the school and students in the class because students would likely not receive the curriculum because they would no longer have a trained teacher to deliver it.

   Reader's Score: 14

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:

   Performance feedback and periodic assessment of progress will be addressed through formative evaluation during the first few years of the project via a usability study (year 1), classroom feasibility study (year 2), and classroom implementation study (year 3; e41-e43). Each of these studies will have substantial increases in the number of teachers and/or students (from 10 to then 20 teachers; from 250 to then 900 students) as well as the breadth of the curriculum under study (from tasks to a module and then the full curriculum; e41-e42). The evaluation team will

provide periodic feedback via bi-monthly calls (e43).

In sum, the evaluation methods are nicely sequenced, and it seems likely that these could provide timely feedback.

Weaknesses:

While the feasibility study seems more authentic in that it has teachers use an entire module for a full class of students (e42), the application is largely vague as to what will be measured during this study. For example, the text notes that an observation protocol will be used that captures data related to implementation including barriers and technical difficulties but does not give readers a sense of the sort of barriers and technical difficulties that may be assessed (e42). Similarly, the application simply notes that feedback from teachers will be collected via weekly logs and final interviews but provides no indication as to what sort of feedback may be the focus of those (e42). While the application provides more specifics about measures in the implementation study, little detail for any of these studies regarding how data across these studies will be analyzed is provided (e41-e42).

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 application outlines components (e.g., computer science curriculum, teacher professional learning materials), mediators (instructional activities, fidelity of implementation), moderators (school contexts; teacher, classroom, and student characteristics), outcomes (students' computer science achievement, attitudes around coding, growth mindset, opportunities to learn, and awareness of STEM fields) that are aligned to the evaluation plan (e40).

Overall, the evaluation plan reasonably articulates the key project components, mediators, and outcomes but measurable thresholds for acceptable implementation are not specified.

Weaknesses:

The application indicates that the thresholds for acceptable implementation will be defined and tested during the formative stages rather than specified beforehand (e40).

Reader's Score: 3

Status: Submitted
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