

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

Status: Submitted

Last Updated: 08/03/2018 11:19 AM

Technical Review Coversheet

Applicant: Community Training and Assistance Center, Inc. (U411C180223)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	30	26
Quality of the Project Design and Management Plan		
1. Project Design/Management	50	45
Total	80	71

Technical Review Form

Panel #14 - EIR Early Phase Tier 1 (Content) - 14: 84.411C

Reader #2: *****

Applicant: Community Training and Assistance Center, Inc. (U411C180223)

Questions

Selection Criteria - Significance

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

- (1) The national significance of the proposed project.
- (2) 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.
- (3) The extent to which the proposed project demonstrates a rationale (as defined in the NIA).
- (4) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.

Strengths:

(1) The proposal highlights the national significance of the proposed project for the Tracy Unified School district which would develop a vertically and horizontally-aligned, integrated PreK-12 STEM curriculum that will be engineering- and computer science-centered. The applicant establishes the importance of preparing students to meet the demand for STEM employees (“STEM occupations account for more than 50% of the employment in major industries”) and highlights the representation of women, African Americans, and Latinx workers in STEM (women represent 23% of STEM jobs and African American and Latinx 6%) which is significantly below their representation in the workforce (47% and 11% respectively; p. 1). Additionally, the proposal notes that most STEM courses are taught “piecemeal” and neither integrates among disciplines nor aligns them vertically across grade levels (p. 1).

(2) The project proposes to use three strategies: place engineering and computer science at the center of learning, implement STEM across PreK-12 grade levels, and integrate STEM into the core curriculum (p. 2). This project involves the demonstration of promising new strategies that are alternatives to existing strategies with elementary science often lacking depth or alignment with secondary courses and secondary STEM classes siloed by disciplinary boundaries which often do not include engineering or computer science.

The project does propose to build on successful strategies like project-based learning (p. 3) and using STEM to help English learners develop academic language proficiencies (p. 3). Utilizing NGSS and California Science Standards to ground the curriculum is also a way that the project is building on successful strategies (p. 4).

(3) The applicant provides a strong rationale for each component of this project. It cites research to demonstrate the positive outcomes related to engineering, including the diminishing of achievement gaps in science for some student populations (p. 5). The proposal also addresses positive outcomes in the following areas: academic language when students start STEM learning early (p. 5), positive student learning effects when students completed integrated STEM courses (p. 5), academic knowledge when students engage in STEM discourse (p. 5), positive impacts from project-based learning on student achievement and decreasing achievement gaps (p. 5-6).

(4) The project represents an exceptional approach to parts of Absolute Priority 3. For the first part of the priority, “Create, develop, implement, replicate, or take to scale entrepreneurial, evidence-based, field-initiated innovations to improve student achievement and attainment for high-need students” (Federal Register, Volume 83, #76, p. 17391), the project has noted several studies that demonstrate their approach to curriculum design (project-based learning, interdisciplinary

STEM courses, engineering and computer science foci, academic language development) has been shown to be beneficial for “high needs” students. Likely with their attention to these strategies, high needs student achievement will increase. Additionally, the second part of Absolute Priority 3, “Improve student achievement or other educational outcomes in one or more of the following areas: science, technology, engineering, math, or computer science (as defined in this notice)” will also likely be accomplished as the project proposes an overhaul of PreK-12 STEM education in Tracy.

For the third aspect of Absolute Priority 3, which focuses on work-based opportunities, it is a strength of the application that it includes letters of support from several Tracy employers along with the Tracy Chamber of Commerce and the City of Tracy. Some of these letters mention apprentice and internship-like opportunities that the organizations already provide for Tracy students.

Weaknesses:

(1) Since the project is focused on curriculum development, it would have strengthened the proposal if more specific data were provided on the national significance related to the Next Generation Science Standards’ (NGSS) implementation or on how well the typically underrepresented students mentioned in this section achieve in those courses.

(2) No weaknesses were found with respect to the strategies of the project.

(3) No weaknesses were found with respect to the rationale for the project.

(4) Although there are aspects of the project that represent an exceptional approach to Absolute Priority 3, “these projects must address the following priority area: Creating or expanding partnerships between schools, local educational agencies, State educational agencies, businesses, not-for-profit organizations, or institutions of higher education to give students access to internships, apprenticeships, or other work-based learning experiences in STEM fields, including computer science (as defined in this notice).” It is an area of weakness in the application that these career linkages, while mentioned and supported by letters, lack much detail as to how they will occur, particularly for elementary aged students. It would strengthen the proposal if more attention were paid to this aspect of the EIR application.

Reader's Score: 26

Selection Criteria - Quality of the Project Design and Management Plan

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

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

(2) The 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.

(3) The extent to which performance feedback and continuous improvement are integral to the design of the proposed project.

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

Strengths:

(1) It is a strength of the application that the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable. The project lists four goals, which are each linked with objectives and outcomes. The

objective metrics are provided, as are the targets for each outcome (p. 7-8).

(2) The management plan adequately describes how they will achieve the objectives of the proposed project on time, including defined responsibilities, timelines, and milestones for accomplishing project tasks. The plan is managed by four related but separate groups, described in Figure 1 (p. 10). It is a strength of the plan that the community will be involved in the management of the project in an advisory role.

The management plan is detailed, with milestones and activities described. It is a strength of the application that the group responsible for each activity is listed, and detailed activities are organized by milestones (which are related to the development of the curriculum, the implementation of the curriculum, formative and summative evaluation of project, and dissemination; p. 12-15). Additionally, the tracking system that will be developed by CTAC will ensure that activities will be completed on time (p. 17)

Key personnel are identified (p. 16-17) and their project responsibilities are described. Additional personnel are identified in the budget (p. e116+) with defined responsibilities. There seems to be sufficient FTE allocated to this project overall as well as to the management of the project.

(3) As the activities of the grant are mainly focused on the development of a PreK-12 STEM curriculum with iterative activities designed to improve the curriculum, performance feedback and continuous improvement are integral to the design of the proposed project. It is a strength of the project that CTAC will create a “tracking system that documents and examines fidelity to the goals, deliverables and timelines in the project management plan” (p. 17). This system will allow for the four leadership teams to systematic review and analyses of project data. The project outlines the formative data it will collect and analyze (p. 18), and activities related to this analyses and then continuous improvement are listed in the management plan (p. 12-15). In fact, Milestone 4 and 5 are focused on performance feedback and improvement.

(4) The applicant will use a variety of mechanisms to disseminate information on its project so as to support further development or replication. It is a strength of the project that dissemination is so clearly important (in fact, Milestone 7 is focused on dissemination). The project proposes to utilize an online portal to provide open source materials. An additional strength if the application is that the project has a plan to disseminate information to California specifically and also has a national plan for dissemination. The application identifies state and national networks and associations it will target for publication and conference submissions.

Weaknesses:

(1) While the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable, there were a few weaknesses in this section. First, several of the objectives will be measured by California Tests, however these tests are only given in a few grade levels; it would strengthen the proposal if additional metrics were identified in order to determine the growth in English language arts, science, and math, particularly for preK-2 grades (p. 7-8). Additionally, there are no outcomes identified for career-readiness under Goal 2 (“increase college-and career-readiness”; p. 8). As this is a major focus of the EIR grant, it would strengthen the proposal if more attention were paid to this Priority. Finally, it would strengthen the proposal if baseline data were provided for student achievement for Goal 1, and IB/AP course enrollments and completions for Goal 2.

(2) One weakness of the management plan is that there is no indication of how the project will achieve the objectives within budget. While Brian Stephens, the superintendent of Tracy School District has as a responsibility “fiscal” oversight (p. 16), this aspect of the management plan is lacking.

(3) There are no weaknesses related to performance feedback or continuous improvement.

(4) There are no weaknesses related to the dissemination plan.

Reader's Score: 45

Status: Submitted

Last Updated: 08/03/2018 11:19 AM

Status: Submitted

Last Updated: 08/07/2018 11:37 PM

Technical Review Coversheet

Applicant: Community Training and Assistance Center, Inc. (U411C180223)

Reader #3: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	30	24
Quality of the Project Design and Management Plan		
1. Project Design/Management	50	42
Total	80	66

Technical Review Form

Panel #14 - EIR Early Phase Tier 1 (Content) - 14: 84.411C

Reader #3: *****

Applicant: Community Training and Assistance Center, Inc. (U411C180223)

Questions

Selection Criteria - Significance

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

- (1) The national significance of the proposed project.
- (2) 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.
- (3) The extent to which the proposed project demonstrates a rationale (as defined in the NIA).
- (4) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.

Strengths:

The Applicant posits that there is a national need to involve all students in STEM education. It presents research showing that STEM occupations make up more than 50 percent of employment in major industries; with engineering and computer science comprising the largest industry groups in STEM and the two projected to show the most growth (p. 1). Its data also show that women are underrepresented in STEM fields, holding 47 percent of the jobs in major industries but only 23 percent of STEM jobs. The need for more African Americans and Latinos in STEM fields is underscored by data showing their group representation when combined equates to only six percent of STEM jobs, compared to their respective 11 and 14 percent representation in the total work force. The Applicant further contends that STEM education often consists of disconnected courses in math and science and gives less attention to engineering and technology (p. 2). Thus its proposed project is designed to provide progressive STEM education to all student groups—Pre-K- 12, with a particular focus on engineering and computer science.

The local significance of the proposed project is underscored with data showing that within the last decade, the targeted school district/community shifted from predominantly white and middle class to one where students have high needs. For example, 59 percent of students live in poverty.

The Applicant's STEM PreK – 12 Pathway program would demonstrate a district-wide curriculum that places engineering and computer science at the core of student learning at all grade levels, beginning in Pre-Kindergarten and progressing through high school. The goal is to improve student achievement in math, science and language arts as measured in standardized tests. (p.24). Successful implementation of the strategies would close the opportunity gap to learn STEM/computer science because all students in the district would engage in the curriculum. That engagement could contribute to more high needs students developing an interest in STEM while having a longer period of time to build proficiency in math and science.

The Applicant does an excellent job demonstrating its rationale for the proposed project. It presents strong researched-based rationale for strategies and activities proposed (pp. 4-6). Its logic model shows adequately links objectives, activities and outcomes, e.g., PBL curriculum centered on ELA, science and math is projected to lead to increase state assessment scores for students (p. e109). Key components are supported by research, including findings that engaging students in STEM project-based learning lead to higher gains in science and math as well as increased confidence in their ability to learn (p. 6).

The proposed project meets the requirements established for Absolute Priority 1 and would be an exceptional approach.

Its rationale depends heavily on multiple research findings and provides an innovative approach that targets all students at an early age and across all grade levels—district-wide, including setting objectives for high needs students (girls, students of color, and low income, p.8).

Weaknesses:

The Applicant does not identify what it considers "major industries," e.g., manufacturing, healthcare, retail, etc. (p. 1). It does not provide citations for the local demographics it cites (p. 2). It lacks population data to support its claim of change from white middle class to a high-needs population.

In describing the many engineering and computer science skills exercised in project-based learning (PBL) but it is not clear if the Applicant is simply providing background information or describing what students would actually do or demonstrate as part of the curriculum (p. 3). Greater clarity or actual descriptors of sample PBL activities students would engage in would be helpful.

The proposal would be stronger if the Applicant provided no details on how/how often professional development for teachers would be delivered, as their own STEM skills and knowledge are critical to instruction and student learning.

While the Applicant focuses on engineering and computer science in its approach and has multiple partnerships, the proposed project does not meet the key standard for Absolute Priority 3 because there are no activities which provide work-based experiences for students. Additionally, the Applicant could provide more details on how work-base experiences might change from Pre-K to high school.

Reader's Score: 24

Selection Criteria - Quality of the Project Design and Management Plan

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

- (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.**
- (2) The 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.**
- (3) The extent to which performance feedback and continuous improvement are integral to the design of the proposed project.**
- (4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.**

Strengths:

There are goals, objectives and outcomes identified for each key component of the project. It is good to see defined goals and measurable outcomes for girls, students of color and low-incomes students, ensuring those groups remain a key focus and are not overlooked (p. 8). The evaluation plan also indicates that for each treatment school there will four comparison schools with similar baseline achievement data and demographic characteristics observed over multiple years before and after the STEM PreK – 12 Pathway is introduced (p. 22).

The management plan is very comprehensive, showing activities, milestones, begin/end dates, and responsible persons (p. 12 – 17). It is clear to see that the Applicant has taken advantage of experience garnered implementing previous large scale projects. The management structure is very well organized with key stakeholders represented, including a Technical Working Group, Standards and Curriculum Team, and a Community Collaboratory consisting of leaders from local STEM industries (p. 10).

The Applicant's creation of a tracking system to monitor the fidelity in the project goals, deliverables and timelines, if

successful, would be a great way to obtain and use feedback to adjust, change or improve project activities where needed. It is good to see identified dates for revising the curriculum based on formative feedback on a regular basis (p. 13). It is especially encouraging to see plans to obtain feedback from students and parents five times per year (p. 18). It is also good that multiple tools would be used in gathering feedback, including focus groups, surveys, and interviews (pp. 17, 18). The specificity is great also, as the Applicant would intentionally track key project goals, including the progress of high needs students toward college and career readiness as well as the rigor and relevance of STEM instruction—especially keeping the focus on engineering and computer science (p. 18).

The dissemination plan is very comprehensive in its target of industry professionals (STEM and Education): providing a list of state and national Educational and STEM related networks and associations. A website directed to policy makers and researchers (p. 19) would also be created, making available project-related artifacts, open source materials and evaluation reports, for example. The inclusion of an alliance of a 20-member research association among the targeted networks would ensure wide knowledge of project findings and could possibly lead to replications.

Weaknesses:

However, there are no stated goals for the provision of work-based experiences to students, which is a requirement of Absolute Priority 3.

The Applicant does not include any separately defined goals, objectives and outcomes for students with disabilities. It's commitment to all students would be strengthened with the inclusion of these students.

While the management plan includes a milestone for implementation of the curriculum, it limits its reference to providing professional development (PD) and training for Implementation Teams (p. 11, 13) and does not specify teacher/instructor trainings. It is not clear when those teams would deliver PD or coaching to classroom teachers.

The management structure includes roles and representatives from most of the key stakeholders--except parents. The addition parents or a parent group would be innovative and demonstrate the district's full commitment to not just serving but engaging all members of its high needs population (p. 10). Having parents at the planning/decision-making tables would provide them with added knowledge and confidence if they were needed to build support for the changes with parent advocacy groups. They would also be better prepared to encourage students on the value of STEM knowledge and skills.

The feedback and continuous improvement plan states the Leadership Council, Technical Working Group and the Community Collaboratory would receive information on the progress of the project in "real time," (p. 18). However, the management plan does not show dates or how often information would be shared (Table 3, p. 14). The plan would be strengthened with the addition of specific dates.

Reader's Score: **42**

Status: Submitted
Last Updated: 08/07/2018 11:37 PM

Status: Submitted

Last Updated: 08/09/2018 04:17 PM

Technical Review Coversheet

Applicant: Community Training and Assistance Center, Inc. (U411C180223)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Significance		
1. Significance	30	25
Quality of the Project Design and Management Plan		
1. Project Design/Management	50	41
Total	80	66

Technical Review Form

Panel #14 - EIR Early Phase Tier 1 (Content) - 14: 84.411C

Reader #1: *****

Applicant: Community Training and Assistance Center, Inc. (U411C180223)

Questions

Selection Criteria - Significance

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

- (1) The national significance of the proposed project.
- (2) 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.
- (3) The extent to which the proposed project demonstrates a rationale (as defined in the NIA).
- (4) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.

Strengths:

The proposal provided national significance to why this grant would support women and underrepresented populations in STEM. Designing and PreK-12 program is a promising new strategy. The vertical alignment model will support students in primary to secondary education. The applicant states that starting STEM in PreK will help students make the connection that STEM topics are interconnected rather than thinking they are discrete topics.

Weaknesses:

The proposal would have been stronger if it explained the work-based learning that would take place. The letters of support from community businesses were helpful and it would have been stronger with an explanation of those experiences.

Reader's Score: 25

Selection Criteria - Quality of the Project Design and Management Plan

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

- (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.
- (2) The 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.
- (3) The extent to which performance feedback and continuous improvement are integral to the design of the proposed project.
- (4) The mechanisms the applicant will use to broadly disseminate information on its project so as to support further development or replication.

Strengths:

The proposal has strong goals, objectives, and outcomes for each of the areas and the information. A strong goal that is set within the proposal is that 90% of classrooms will be in the developing or well-developed areas after two years of implementation. Another strength of the proposal is that for each treatment school there would be four comparison

schools. The performance feedback is being tracked by two programs. The applicant explains how results will be communicated over an online portal and using both California and National platforms.

Weaknesses:

The proposal would be stronger if there were Prek-2 objectives and goals. There are also no goals for work-based experience.

Reader's Score: 41

Status: Submitted
Last Updated: 08/09/2018 04:17 PM