

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

Status: Submitted

Last Updated: 08/09/2018 03:10 PM

Technical Review Coversheet

Applicant: East Tennessee State University (U336S180038)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Services		
1. Project Services	15	15
Quality of Project Design		
1. Project Design	40	35
Quality of the Management Plan		
1. Management Plan	25	23
Quality of the Project Evaluation		
1. Project Evaluation	20	20
Sub Total	100	93
Priority Questions		
Competitive Preference Priority		
Promoting STEM ED w/a focus on Computer Science		
1. CPP 1	3	3
Promoting Effective Instr. in Classrooms & Schools		
1. CPP 2	3	3
Novice Applicant		
1. CPP 3	2	2
Sub Total	8	8
Total	108	101

Technical Review Form

Panel #3 - Teacher Quality Partnership - 3: 84.336S

Reader #1: *****

Applicant: East Tennessee State University (U336S180038)

Questions

Selection Criteria - Quality of Project Services

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

(i) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.

(ii) The extent to which the services to be provided by the proposed project reflect up-to-date knowledge from research and effective practice.

(iii) The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

Strengths:

(i) The applicant clearly describes how the services to be provided involve the collaboration of appropriate partners to maximize the effectiveness of project services. The i-SLICEE project represents a partnership among K-5 elementary teachers from eight high-need and one non-high need school districts in Northeast Tennessee, as well as East Tennessee State University College of Arts and Sciences, College of Education, School of Graduate Studies, and Northeast Tennessee Innovation STEM Hub. The LEA partners will assist in teacher recruitment, strengthen professional learning communities within the schools and the district, and provide evaluation data, such as students' scores on the state standardized tests and teachers' evaluation data. Building on more than two decades of work in math and science education, a well-developed infrastructure has been established that supports a network of cooperation and mutual respect among local education agents, business partners, and East Tennessee State University (ETSU). The LEA-Business-IHE partnership is committed to supporting K-12 Science Technology Engineering Mathematics education and workforce in the region by sharing their institutional resources in terms of social, human, financial and intellectual capital (pp. 4 -5).

(ii) Throughout the narrative, the applicant provides extensive research to support the proposed services to be provided by the i-SLICEE project. The applicant cites relevant research and summarizes key findings which reflect up-to-date knowledge from research and effective practice (references pp. e 102 – 104). The i-SLICEE project is based on a firm body of research and evidence-based practices. The project also aligns with rigorous implementation of Common Core State Standards in ELA and Mathematics, Next Generation Science Standards, Tennessee State Standards for English Language Arts & Literacy, Mathematics, and Science (pp. 7-8).

(iii) The applicant thoroughly describes comprehensive professional development (PD) services to be provided by the proposed i-SLICEE project which are of sufficient quality, intensity, and duration to lead to improvements in practice. The project consists of three types of in-service professional development activities, including a 5-day summer PD for mentor teachers and their partner preservice teachers; a 2-day winter PD for mentor and preservice teachers; and a 5-day summer PD for new teachers (program graduates). The purposes of the in-service PDs are to create and educate a cadre of knowledgeable and skillful mentor teachers to develop and implement i-SLICEE curriculum and to support these in-service teachers to become more effective teachers in partner LEAs. The work with in-service teachers also addresses the sustainability of the project in that these mentor teachers will likely work with pre-service teachers in the future. The mentor teachers will be lead teachers to integrate STEM, ELA and computation in the region. The applicant proposes to provide i-SLICEE learning opportunities and additional curriculum resources to the mentor teachers. The program will

assist mentor teachers in developing and implementing a variety of i-SLICEE lesson modules appropriate for their classrooms. Specifically, these modules will be aligned with Content and Practices Standards of Common Core ELA, Common Core Math, Next Generation Science Standards, and Tennessee State Standards (pp. 34 – 25). For classroom practice to change, the applicant’s design will ensure professional development is grounded in the curriculum, embedded within an aligned system and connected to elements of instruction.

Weaknesses:

- (i) None Noted
- (ii) None noted
- (iii) None noted

Reader's Score: 15

Selection Criteria - Quality of Project Design

1. In determining the quality of the design of the proposed project, the Secretary considers the extent to which the proposed project consists of a comprehensive plan that includes a description of:

(i) The extent to which the proposed project demonstrates a rationale (as defined in 34 CFR 77.1(c)).

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

(iii) The extent to which the proposed project is designed to build capacity and yield results that will extend beyond the period of Federal financial assistance.

(iv) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for this competition.

Strengths:

(i) The proposed i-SLICEE project includes a goal-based logic model (p. e 99) which demonstrates a clear rationale (as defined in 34 CFR 77.1(c)). The logic model includes a phase-by-phase description of feasible project activities and focused outcomes which are clearly linked to project goals and objectives. The logic model is designed and tested to align to the project’s vision, goals and objectives, research rationales, project activities, anticipated outcomes of project objectives. The logic provides a solid rational for ensuring that teachers and their students are involved in rich and challenging STEM+C content, as well as informational and reading and writing in their classes.

(ii) The applicant identifies two specific goals and provides clearly articulated objectives to be achieved by the proposed i-SLICEE project. For each goal, the applicant provides a detailed description of objectives; specifies indicators; identifies measurements to be used; and describes the analysis process (pp. 39 – 41).

(iii) The proposed i-SLICEE project is designed to build capacity and yield results that will extend beyond the period of Federal financial assistance. The scope of the project and its potential impact are significant because It will unite nine school districts and East Tennessee State University. Eight of the LEAs are identified as high-need LEAs, and most of them are rural, low-income LEAs with a high percent of students at the poverty level. The project will directly impact 300 K-5 preservice teachers, 120 new K-5 teachers and 60 K-5 mentor teachers over the five-year project period; further, it will indirectly impact 360 teachers when the 180 teacher participants share the i-SLICEE curriculum with other teachers in their districts. This translates into potential positive outcomes for around 20,000 K-5 students. The project will stress the critical role of K-5 elementary pre-service and in-service teachers in the teacher preparation program and provide professional development to enhance teachers’ content knowledge and skills. The proposed partnership will also build credibility among key constituents, including university STEM and ELA faculty and school administrators, by designing

and implementing interventions to demonstrate commitment to change. These combined components of the proposed i-SLICEE project will build capacity at the school and university levels and yield results that will extend beyond the period of Federal financial assistance.

(iv) The proposed i-SLICEE project is an innovative approach to the priorities established for this competition. The i-SLICEE project addresses Absolute Priority 1 as a partnership grant for the preparation of teachers which will create a model teacher preparation program at the pre-baccalaureate level through the implementation of specific reforms of the existing teacher preparation programs at East Tennessee State University. Also, the proposed i-SLICEE project will provide follow-up supports for program student teachers and program graduates who become teachers in partner LEAs. The i-SLICEE project is designed to support the recruitment and/or retention of educators who are effectively equipped to address the needs of 21st Century education and workforce. Also, the proposed project has the potential to increase the diversity of well-prepared learners from under-represented STEM populations (including, minorities, low social economic status, disability, low English proficiency groups). The i-SLICEE project is designed to improve student achievement, interests, and knowledge in science, technology, engineering, math, computer science, and literacy.

Weaknesses:

(i) None noted

(ii) The goals do not include performance measures. For example, goal 1 states, "Create an effective and innovative model teacher preparation program at the pre-baccalaureate level through the implementation of integrating STEM and English Language Arts with computation in elementary education (K-5) teacher preparation program". This goal does not include a performance measure; therefore, the potential attainability of the goal cannot be determined.

(iii) None noted

(iv) None noted

Reader's Score: 35

Selection Criteria - Quality of the Management Plan

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

(i) 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.

(ii) The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding;

(iii) The adequacy of support, including facilities, equipment, supplies, and other resources, from the applicant organization or the lead applicant organization.

Strengths:

(i) The applicant provides an adequate management plan to achieve the objectives of the proposed i-SLICEE project on time. The applicant describes the instruction team members, including the academic department at the university as well as the academic backgrounds, experiences with teachers and instructional roles of proposed team members (p. 7 and Appendix 8). The applicant provides a year to year project timeline and progression of project design, which summarizes the project activities and the progression of program cycle, as well as detailed information about project phases and anchoring supports.

(ii) There is a strong potential for the incorporation of the i-SLICEE project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding; The STEM/ELA methods courses will be revised and updated long after this project is completed. Additionally, the project activities will be sustained in several specific ways after funding has ended. First, the project team will continue to meet and plan on-going professional development activities and sustain the partnerships. Secondly, the project PI and Co-PIs will continue to work in potential target schools to support teachers' STEM/ELA/C instruction. The work with in-service teachers also addresses the sustainability of the project in that these mentor teachers will likely work with pre-service teachers in the future. The mentor teachers will be lead teachers to integrate STEM, ELA and computation in the region. The applicant will provide i-SLICEE learning opportunities and additional curriculum resources to the mentor teachers (p. 27).

(iii) The applicant clearly describes the adequacy of support, including facilities, equipment, supplies, and other resources. As part of the collaboration, ETSU will provide \$1 million in-kind support by waiving tuition for 320 teachers' three graduate credits (around \$520,000 in-kind match) and providing faculty release time and workload credit (around \$480,000 in-kind) to substantially participate in the project (p. 5). The roles and commitments of LEA -IHE partners are described in all Letters of Support (Appendix I). Project participants will have numerous resources while on the ETSU campus, including computer labs, state-of-the-art laboratory facilities and equipment, full-service library and an instructional materials center (p. 7).

Weaknesses:

(i) The narrative does not include milestones for accomplishing project tasks.

(ii) None noted

(iii) None noted

Reader's Score: 23

Selection Criteria - Quality of the Project Evaluation

1. In determining the quality of the evaluation, the Secretary considers:

(i) The extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes.

(ii) The extent to which the methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.

Strengths:

(i) The applicant describes methods of evaluation which will provide valid and reliable performance data on relevant outcomes. Various summative and formative assessment instruments (surveys, assessment results, interviews, onsite observations) will be used to evaluate the effectiveness of the project and determine if both preservice, in-service teacher and student participants demonstrate significant growth in STEM/ELA content, pedagogical skills, and attitudinal perceptions. By objective, the applicant describes measurements to be used in the evaluation process and describes how data will be analyzed (pp. 39 – 41).

(ii) The methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project. The evaluation will apply qualitative methods to examine the project's research design, theoretical framework, data collection methods, and development activities. Evaluation activities will integrate implementation and

monitoring of research and development activities (process evaluation); provision of timely, periodic feedback to inform improvement of those activities (formative evaluation); and summative evaluation of the goals and quality of the work near its completion. Data collection will incorporate document and report reviews (e.g., of theoretical frameworks, data collection and analysis plans, and reports); interviews with project staff, industry partners, and participating teachers; and on-site observations of key activities, including summer camps and teacher professional development. Document review and interviews with project staff will occur each project year, and the EMEC team will provide frequent feedback to allow for iterative improvements to the i-SLICEE design. This will include quarterly written data summaries over the life of the project, and regular (i.e., at least monthly) communications via telephone and email with the PI and other project staff, to review evaluation findings and present recommendations for mid-course changes.

Weaknesses:

- (i) None noted
- (i) None noted

Reader's Score: 20

Priority Questions

Competitive Preference Priority - Promoting STEM ED w/a focus on Computer Science

1. **Projects designed to improve student achievement or other educational outcomes in one or more of the following areas: science, technology, engineering, math, or computer science. These projects must address the following priority area:**

Increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including computer science, through recruitment, evidence-based (as defined in 34 CFR 77.1) professional development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.

NOTE:

How does an applicant demonstrate that its proposed strategy for professional development and retention strategy for current STEM educators is evidence-based?

1. **Submitting a citation of a study that is (1) focused on a STEM-focused professional development or retraining strategies, (2) relevant to the proposed project, and meets at least the design standards set forth in the "Promising Evidence" definition; OR**
2. **Submitting a "Logic Model" that (1) identifies the STEM professional development or retraining strategy of the project and (2) is informed by research or evaluation findings that suggest the project component is likely to improve "Relevant Outcomes."**

Strengths:

The i-SLICEE project is designed to improve student achievement, interests, and knowledge in science, technology, engineering, math, computer science, and literacy. The i-SLICEE project is designed to support the recruitment and/or retention of educators who can effectively address the needs of 21st Century education and workforce development. Also, it would increase the diversity of well-prepared learners from under-represented STEM populations (including, minorities, low social economic status, disability, low English proficiency groups). The project's professional development will be led by highly trained and dedicated STEM and ELA content and education faculty.

Weaknesses:

None noted

Reader's Score: 3

Competitive Preference Priority - Promoting Effective Instr. in Classrooms & Schools

- 1. Projects that are designed to support the recruitment or retention of educators who are effective and increase diversity (including, but not limited to, racial and ethnic diversity).**

Strengths:

The purpose of the proposed project includes promoting effective instruction in classrooms and schools. A key goal of the proposed project is to create an effective and innovative model teacher preparation program at the pre-baccalaureate level through the implementation of integrating STEM and English Language Arts with computation in elementary education (K-5) teacher preparation program. Appropriate follow-up support will be provided for program student teachers, program graduates, new teachers and in-service mentor teachers to become effective teachers to advance their students' academic performances in partner LEAs.

Weaknesses:

None noted

Reader's Score: 3

Competitive Preference Priority - Novice Applicant

- 1. Projects submitted by applicants that meet the definition of novice applicant at the time they submit their application.**

NOTE:

The lead applicant must meet all three requirements to earn CPP 3 points:

- 1. Has never received a grant or sub-grant under the TQP program; and**
- 2. Has never been a member of a group application (i.e. in a TQP eligible partnership); and**
- 3. Has not had an active discretionary grant from the Federal Government in the five years before the deadline date for applications under the program.**

Strengths:

This is a novice project applicant with a goal to benefit a high-need region.

Weaknesses:

None noted

Reader's Score: 2

Status: Submitted

Last Updated: 08/09/2018 03:10 PM

Status: Submitted

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Technical Review Coversheet

Applicant: East Tennessee State University (U336S180038)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Services		
1. Project Services	15	15
Quality of Project Design		
1. Project Design	40	35
Quality of the Management Plan		
1. Management Plan	25	23
Quality of the Project Evaluation		
1. Project Evaluation	20	20
Sub Total	100	93
Priority Questions		
Competitive Preference Priority		
Promoting STEM ED w/a focus on Computer Science		
1. CPP 1	3	3
Promoting Effective Instr. in Classrooms & Schools		
1. CPP 2	3	3
Novice Applicant		
1. CPP 3	2	2
Sub Total	8	8
Total	108	101

Technical Review Form

Panel #3 - Teacher Quality Partnership - 3: 84.336S

Reader #2: *****

Applicant: East Tennessee State University (U336S180038)

Questions

Selection Criteria - Quality of Project Services

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

(i) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.

(ii) The extent to which the services to be provided by the proposed project reflect up-to-date knowledge from research and effective practice.

(iii) The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

Strengths:

(i) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.

ETSU has a well-established College of Education and College of Arts and Sciences that have documented relationships with the participating LEA school districts in delivering STEM activities using other state- and federally-funded initiatives. The applicant presents strong letters of support from each of the participating school districts to support the proposed collaboration with the partners. Teacher mentor participation is highlighted in the proposal with the advantage of providing continuity in instruction even after the project has ended. Commitment from personnel in the form of a Project Management Team described on p. e24, demonstrates a shared responsibility between the university and the LEAs.

(ii) The extent to which the services to be provided by the proposed project reflect up-to-date knowledge from research and effective practice.

The applicant describes a professional development approach which has been documented in the literature for past success with STEM initiatives. The proposal also documents past successes of the key personnel in the proposal using similar processes. These efforts have been published in peer-reviewed resources. The research approach of this proposal will likely add significantly to new and reproducible knowledge.

(iii) The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

The quality and scope of the ETSU STEM proposal has a chance of significantly improving STEM (and literacy and computer language) instruction in this community. Furthermore, newly developed curriculum generated by this project will likely be sustainable in the school districts because of the use of a professional development approach for preservice, new teachers and mentoring teachers.

Weaknesses:

(i) No weaknesses in this area were noted

(ii) No weaknesses in this area were noted.

(iii) No weaknesses in this area were noted.

Reader's Score: 15

Selection Criteria - Quality of Project Design

1. In determining the quality of the design of the proposed project, the Secretary considers the extent to which the proposed project consists of a comprehensive plan that includes a description of:

(i) The extent to which the proposed project demonstrates a rationale (as defined in 34 CFR 77.1(c)).

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

(iii) The extent to which the proposed project is designed to build capacity and yield results that will extend beyond the period of Federal financial assistance.

(iv) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for this competition.

Strengths:

(i) The rationale to combine STEM and literacy training, even in early elementary classrooms, is appropriate. The logic model clearly outlines the proposed project. This focus is especially important as the applicant documents that students from needy school districts notoriously lag behind their peers from wealthier districts in achievement in both areas. Furthermore, including computational curricula provides additional tools for students. The focus on both pre-service and in-service activities is also a strong feature of the proposed project which should enhance the sustainability of the project. This allows pre-service and recently inducted teachers to practice in an environment supported by veteran teachers who have received similar training, emphasizing the objectives of the iSLICEE curriculum. This creates a climate of cooperation and peer support that should make the schools a more attractive place to teach and learn.

(ii) A detailed timeline for the project is provided in Table 8 on page 21. School year and anchoring activities during breaks are appropriate and provide opportunities for teacher, students and mentors to meet and share ideas collaboratively. A benchmark for having at least 70% of elementary students in the treatment group attaining the "proficient" level on the state performance achievement assessment as identified in the Project Objectives and Performance Measures Information on pages e111-e113 of the proposal and seems reasonable. Table 13 on pages 39-41 clearly identifies measures and analyses of success for each of the project goals and objectives.

(iii) The extent of support for the proposal from ETSU and the participating school districts is excellent and increases the likelihood the program is sustainable. The established Project Management Team has a past history of success with similar initiatives and will likely continue to function in this capacity of developing and deliver STEM and literacy pre-service and in-service program in the future. Mentoring teachers participating in the program are likely to continue to champion STEM and literacy initiatives. The 100% financial match meets TQP program requirements. The proposed opportunity for teachers to receive "free" graduate credit for some of these activities is also very attractive.

(iv) The proposal to focus on the development of new STEM and literacy activities using preservice teachers, graduate assistants and teacher mentors may provide opportunities for the development of important new and innovative curricular applications and assessments. Similar past projects by ETSU and school district partners has resulted in the creation of new knowledge in STEM education that has been published and shared at regional and national education meetings. Furthermore, the collaborative nature of the university/LEA relationship ensures curricula that is generated appropriately addresses the needs of students, educators, and is feasible and appropriate.

Weaknesses:

(i) The goals and objectives for this proposal are not well-defined or measureable. The i-SCLICEE Logic model depicted in Figure 1 on page 20 of the proposal identifies goals, objectives and outcomes, but does not identify input, outputs or measures. The listing of outcomes in Part D. of the logic model lists "Increase students' academic performances in the treatment population". However, the specific measures to be used to quantitate academic success, and associated benchmarks are not included.

Reader's Score: 35

Selection Criteria - Quality of the Management Plan

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

(i) 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.

(ii) The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding;

(iii) The adequacy of support, including facilities, equipment, supplies, and other resources, from the applicant organization or the lead applicant organization.

Strengths:

(i) The management plan proposed by the applicant is adequate to achieve the objectives of the proposed project on time and within budget. The applicant presents responsibilities and a timeline for accomplishing project tasks in Table 10 on page 30 of the proposal. Credentials and experience of key personnel are appropriate. The budget as presented on pages e107-110 is reasonable given the scope of the project. Salary FTE support for the PI and coPIs as described on page e107 is appropriate. Travel and supply costs are reasonable. Training stipends for teachers participating as in service mentors and for winter and summer workshops as described on page e109 is appropriate. in the Support for a graduate assistant to work in the school system as described on page e109 is appropriate.

(ii) The use of teacher mentors in the school districts and the strong Project Management Team will significantly support the ongoing use of the curricula after funding for the project has ended. Activities utilized by district teachers (that they may have developed themselves during project workshops) are also likely to continue after the project has ended. The proposed management team and plan for oversight of the project are reasonable given the scope of the project.

(iii) The applicant clearly demonstrates the key personnel are qualified to lead the proposed project. The resumes of Drs. Chih-Che Tai and Moran indicate they have successfully participated in similar initiatives. Letters of support from school districts are strong. Facilities as discussed on pp. 5, 7 and Appendix I. These resources are appropriate given the scope of the curriculum planned. The applicant's provision of in kind support, in terms of workload credit, is significant and demonstrates a strong commitment.

Weaknesses:

(i) The objectives presented in the management plan and documented in Table 13 of the project evaluation plan on pages 39-41 contain only summative measures and do not include milestones to formatively measure project progress.

Reader's Score: 23

Selection Criteria - Quality of the Project Evaluation

1. In determining the quality of the evaluation, the Secretary considers:

- (i) The extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes.
- (ii) The extent to which the methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.

Strengths:

- (i) ETSU describes a well-designed and robust plan for evaluation of its proposed project with data that will be collected longitudinally. Plans for formative and summative analysis are described, and the applicant proposes to gather both quantitative and qualitative data. Measurements and types of analyses that will be used in the evaluation are clearly described in the Table 14 of pp. e58-e60. Data will be collected to measure student performance improvement such as science/math/ELA knowledge gains, and student proficiency on state academic performance achievement tests. Data will also be collected to measure teacher participation, completion of training, increased performance and retention. Although data will be collected by identified leaders for each of the Goals, an external reviewer will conduct the analyses and generate data and outcome reports.
- (ii) The evaluation plan described by ETSU thoroughly outlines how SMART goals and objectives will be measured and analyzed. Evaluation criterion are clearly described on pp. e60-e63. Responsibilities of key personnel in the evaluation plan are identified and an external reviewer is identified. Criteria for what would constitute a successful project are described. The use of onsite observations and interviews are described.

Weaknesses:

- (i) No weaknesses are identified.
- (ii) No weaknesses are identified.

Reader's Score: 20

Priority Questions

Competitive Preference Priority - Promoting STEM ED w/a focus on Computer Science

1. Projects designed to improve student achievement or other educational outcomes in one or more of the following areas: science, technology, engineering, math, or computer science. These projects must address the following priority area:

Increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including computer science, through recruitment, evidence-based (as defined in 34 CFR 77.1) professional development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.

NOTE:

How does an applicant demonstrate that its proposed strategy for professional development and retention strategy for current STEM educators is evidence-based?

1. Submitting a citation of a study that is (1) focused on a STEM-focused professional development or retraining strategies, (2) relevant to the proposed project, and meets at least the design standards set forth in the "Promising Evidence" definition; OR

2. Submitting a "Logic Model" that (1) identifies the STEM professional development or retraining strategy of the project and (2) is informed by research or evaluation findings that suggest the project component is likely to improve "Relevant Outcomes."

Strengths:

The ETSU proposal targets improving teachers' skills in STEM, literacy and computational curricula and generating new curricula to support STEM activities in the classroom. Preservice, recent graduates and experienced STEM teachers will all be impacted. ETSU and the participating LEAs have had past success in improving teachers STEM skills through enhanced curricula and teacher development programming, and this effort will likely be similarly successful. The combination of supporting pre-service, recently inducted teachers and veteran teachers in the participating school districts should reinforce the objectives of the curriculum while creating a cooperative learning atmosphere. Strong professional development programming in the school district will also support the adoption of the curriculum and encourage peer sharing of successes.

Weaknesses:

Not applicable.

Reader's Score: 3

Competitive Preference Priority - Promoting Effective Instr. in Classrooms & Schools

- 1. Projects that are designed to support the recruitment or retention of educators who are effective and increase diversity (including, but not limited to, racial and ethnic diversity).**

Strengths:

The ETSU proposal describes an outstanding and innovative project that targets improving teachers' skills in STEM, literacy and computational curricula. This initiative is likely to improve teacher retention in the district as the applicant had identified past successes in improving teachers STEM skills through enhanced curricula and teacher development programming has impacted both job performance and satisfaction. Curriculum addressing skills in cultural competency, low English skills and providing education for students with disabilities are also proposed by the applicant.

Weaknesses:

No weaknesses were noted in this area.

Reader's Score: 3

Competitive Preference Priority - Novice Applicant

- 1. Projects submitted by applicants that meet the definition of novice applicant at the time they submit their application.**

NOTE:

The lead applicant must meet all three requirements to earn CPP 3 points:

- 1. Has never received a grant or sub-grant under the TQP program; and**
- 2. Has never been a member of a group application (i.e. in a TQP eligible partnership); and**
- 3. Has not had an active discretionary grant from the Federal Government in the five years before the deadline date for applications under the program.**

Strengths:

East Tennessee State qualifies as a novice applicant.

Weaknesses:

Not applicable.

Reader's Score: **2**

Status: Submitted

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Panel #3 - Teacher Quality Partnership - 3: 84.336S

Reader #3: *****

Applicant: East Tennessee State University (U336S180038)

Questions

Selection Criteria - Quality of Project Services

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(i) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.

(ii) The extent to which the services to be provided by the proposed project reflect up-to-date knowledge from research and effective practice.

(iii) The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

Strengths:

i. The applicant provides sound evidence demonstrating the proposed services will involve the collaboration of appropriate partners to maximize the effectiveness of the project. As a part of its teacher preparation collaboration efforts with its partner local education agency (LEA), East Tennessee State University proposes to (1) create a model teacher preparation program at the pre-baccalaureate level through the implementation of specific reforms of its existing teacher preparation programs, and (2) provide follow-up supports for program student teachers and program graduates who become teachers in partner LEAs. Collaboration efforts by some of the partners will include but are not limited to the LEA partners assisting in teacher recruitment and strengthening professional learning communities within the schools. The LEA-Business-IHE partnership is committed to supporting K-12 Science Technology Engineering Mathematics education and workforce (p. 2).

ii. The proposal presents a myriad of current and relevant research citations to support its rationale for addressing the identified needs of the target group. For example, the applicant cites research regarding the increasing need for a scientifically and computationally literate population, and it emphasizes the importance of elementary school students not only receiving meaningful STEM, literacy and computation instruction, but also seeing the seamless nature of how each informs the other (page 8).

iii. The applicant thoroughly demonstrates its proposed training and professional development is appropriate to accomplish the specific aims of the project. The applicant proposes in-service and professional development opportunities designed to create and educate a cadre of knowledgeable and skillful mentor teachers to develop and implement i-SLICEE curriculum. The applicant's professional development is guided by evidence-based current and relevant practices (p. 8). The applicant proposes five-day summer and winter professional development sessions for mentor teachers and their partner preservice teachers, and five-day summer professional development for new teachers (pp. 23, 24).

Weaknesses:

No weaknesses noted.

Selection Criteria - Quality of Project Design

1. In determining the quality of the design of the proposed project, the Secretary considers the extent to which the proposed project consists of a comprehensive plan that includes a description of:

(i) The extent to which the proposed project demonstrates a rationale (as defined in 34 CFR 77.1(c)).

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

(iii) The extent to which the proposed project is designed to build capacity and yield results that will extend beyond the period of Federal financial assistance.

(iv) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for this competition.

Strengths:

i. The applicant articulates a clear and credible rationale for the proposed project rooted in the belief that exposure to STEM curricular materials contribute to children in poverty learning more challenging ideas when they are as facilitated by teachers who are highly qualified in the subjects. In addition, the project has the promise to help K-5 pre-service and in-service teachers become cognizant and comfortable with computational thinking (pp. 12, 13). A detailed logic model that is aligned with the project's, goals and objectives also provides support for the project's rationale (p. 19)

ii. The applicant clearly identifies four robust goals to be achieved by the project that clearly address the identified needs of the target audience. One of the project's goals, for example, is to create an effective and innovative model teacher preparation program at the pre-baccalaureate level by integrating STEM and English Language Arts with computation in elementary education (K-5) teacher preparation program (p. e16). In addition, the goals are accompanied by objectives and performance indicators that are realistic and time-bound. One of the objectives proposed by the applicant is that pre-service teachers will significantly increase their science-math- ELA-computation content knowledge (p. 3).

iii. The applicant provides sound evidence the proposed project is designed to build capacity and yield results in the preservice program at ETSU as well as at the school level in the target LEA. after the administration of the grant period. As indicated in the project narrative, the applicant will build capacity by providing educational and professional development opportunities to pre-service teachers, in-service mentor teachers, program graduates, new teachers, and host university faculty members (p. 20). As a part of its capacity-building process, the applicant will also revise the STEM curriculum to include content and strategies to address the academic needs of students with disabilities and limited English proficiency (p. 25).

iv. The project represents an exceptional approach to the priorities established for the competition. As indicated in the narrative, the proposal will take a four-pronged approach to achieve this vision of effective i-SLICEE instruction for students in elementary education (K-5). This approach will assure targeted elementary teachers, through on-going and sustained professional development (PD), understand rich, standards-based content and standards-based instructional strategies and how to use them effectively to increase achievement and reduce achievement gaps in elementary students. The proposed project aims to increase the number of elementary teachers who participate in content-based professional development and to prepare highly qualified teachers via a STEM-based approach. The applicant plans to provide preservice and inservice teachers with research-based information on multicultural education, English Language Learners, struggling readers and the Response to Intervention process which focuses on appropriately assisting students who may have disabilities (pp. 23-25).

Weaknesses:

ii. The project goals are not stated in measurable terms. For example, goal one will involve creating a teacher preparation model and goal two will involve providing follow-up. While these are worthy goals, the applicant does not identify specific and measurable terms to determine if the goals are achieved by the proposed project.

Reader's Score: 36

Selection Criteria - Quality of the Management Plan

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

(i) 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.

(ii) The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding;

(iii) The adequacy of support, including facilities, equipment, supplies, and other resources, from the applicant organization or the lead applicant organization.

Strengths:

i. The applicant's visual representation of a detailed management plan demonstrates the project's goals are aligned with annual activities, a yearly timeline, along with measures and identified persons responsible for project tasks. For example, the project will run for three program cycles. Each program cycle consists of three phases and two anchoring supports for the pre-service teachers, in-service mentor teachers, program graduates, new teachers, and IHE faculty members in the teacher preparation program and professional development activities. (pp. 31, 32). Clearly defined responsibilities of key project personnel is evident. For example, the principal investigator will be responsible for the overall implementation of the project. The person responsible for evaluating the overall project has also been identified (pp. 30-32). The applicant outlines a detailed budget narrative that identifies all costs that will be incurred at the time of the program's implementation. Costs associated with the project will include personnel, travel, transportation, materials and supplies, consultants, and training for teachers and a total of 100 participants (pp. 103-105).

ii. The applicant clearly demonstrates the proposed project has the potential for incorporation of the project's purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding. As indicated in the narrative, when participants return to their respective schools to implement the integrated STEM-ELAC content during the academic year, six of the university's faculty members will provide ongoing support for teachers by visiting project participants one or two times by the end of the project. (p. 36). In addition, professional development builds capacity via teachers connecting with business partners and STEM professionals who are later invited into schools and classrooms to help students learn. Additionally, teachers are regularly invited to the workplace to participate in job shadowing (p. 37).

iii. The applicant clearly demonstrates the project will receive adequate support, including facilities, equipment, supplies, and other resources. The applicant will host professional development, assist in the design of professional development, deliver professional development, provide facilities, provide tutoring for low achieving students, have personnel visit classrooms to model effective teaching and provide in-service training for teachers during the academic year. Project participants will also have access to ETSU's computer labs, state-of-the-art laboratory facilities and equipment, full-service library and an instructional materials center (p. 7).

Weaknesses:

i. The proposal does not evidence milestones to indicate progress of the project towards accomplishing the proposed activities or tasks. The absence of milestones will not allow the applicant to determine if the project is on track or which

activities are being addressed at a given time.

Reader's Score: 24

Selection Criteria - Quality of the Project Evaluation

1. In determining the quality of the evaluation, the Secretary considers:

(i) The extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes.

(ii) The extent to which the methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.

Strengths:

i. The applicant outlines a comprehensive evaluation plan that is formative and summative in nature and has promised to provide valid and reliable performance data on relevant outcomes. Various summative and formative, and quantitative and qualitative assessment instruments will be used to evaluate the effectiveness of the project and to determine if both teacher and student participants will grow significantly in content knowledge, pedagogical skills, and attitudinal perceptions (p. 39). Data to be collected will include determining the number of teachers participating in content-based professional development, the number of highly qualified teachers in the targeted school district, and student achievement results in grades 3-5 based on the state's academic achievement assessment (pp. 40, 41).

ii. Well-developed methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project are evidenced. The applicant's evaluation plan is thorough and is designed to measure the success of the project in achieving its goals, objectives, and outcomes. The evaluation methodology will identify indicators and analyze the alignment of the project goals to objectives (pp. 38-42). The budget narrative also includes a justification for the costs of the project's evaluation (p. e109).

Weaknesses:

No weaknesses noted.

Reader's Score: 20

Priority Questions

Competitive Preference Priority - Promoting STEM ED w/a focus on Computer Science

1. Projects designed to improve student achievement or other educational outcomes in one or more of the following areas: science, technology, engineering, math, or computer science. These projects must address the following priority area:

Increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including computer science, through recruitment, evidence-based (as defined in 34 CFR 77.1) professional development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.

NOTE:

How does an applicant demonstrate that its proposed strategy for professional development and retention strategy for current STEM educators is evidence-based?

1. Submitting a citation of a study that is (1) focused on a STEM-focused professional development or retraining strategies, (2) relevant to the proposed project, and meets at least the design standards set forth in the "Promising Evidence" definition; OR

2. Submitting a “Logic Model” that (1) identifies the STEM professional development or retraining strategy of the project and (2) is informed by research or evaluation findings that suggest the project component is likely to improve “Relevant Outcomes.”

Strengths:

The project will focus on promoting science, technology, engineering, or math (STEM) Education, Science by promoting its STEM + C (computer) education initiative. The applicant’s i-SLICEE –STEM + C project is designed to improve student achievement, interests, and knowledge in the following areas: science, technology, engineering, math, computer science, and literacy. In addition, the project’s professional development will be led by highly trained and dedicated STEM and ELA content and education faculty (p. 2).

Weaknesses:

No weaknesses noted.

Reader's Score: 3

Competitive Preference Priority - Promoting Effective Instr. in Classrooms & Schools

1. Projects that are designed to support the recruitment or retention of educators who are effective and increase diversity (including, but not limited to, racial and ethnic diversity).

Strengths:

The applicant provides clear evidence the proposal is designed to support the recruitment or retention of educators who are effective and increase diversity. It proposes to create a replicable and sustainable model for teacher preparation that improves the initial preparation of highly qualified, culturally competent teachers, increases the number of highly qualified diverse teacher program completers and offers induction supports to the program completers over the course of their first two years of employment in partner schools (page 2). In addition, participating preservice teachers will have the opportunity to learn a plethora of appropriate teaching strategies for working with diverse students (p. 27).

Weaknesses:

No weaknesses noted.

Reader's Score: 3

Competitive Preference Priority - Novice Applicant

1. Projects submitted by applicants that meet the definition of novice applicant at the time they submit their application.

NOTE:

The lead applicant must meet all three requirements to earn CPP 3 points:

- 1. Has never received a grant or sub-grant under the TQP program; and**
- 2. Has never been a member of a group application (i.e. in a TQP eligible partnership); and**
- 3. Has not had an active discretionary grant from the Federal Government in the five years before the deadline date for applications under the program.**

Strengths:

The applicant is identified a novice applicant as it has never been the recipient of a Teacher Quality Grant.

Weaknesses:

No weaknesses noted.

Reader's Score: **2**

Status: Submitted

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