

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

Status: Submitted

Last Updated: 08/08/2019 12:28 PM

Technical Review Coversheet

Applicant: Purdue University (U336S190036)

Reader #1: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Project Design	40	35
Adequacy of Resources		
1. Resources	20	20
Quality of the Management Plan		
1. Management Plan	20	15
Quality of the Project Evaluation		
1. Project Evaluation	20	20
Sub Total	100	90
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. STEM/Computer Science	5	5
Sub Total	5	5
Invitational Priority		
Invitational Priority		
1. Promise Zones	0	0
Sub Total	0	0
Total	105	95

Technical Review Form

Panel #9 - Teacher Quality Partnership - 1: 84.336S

Reader #1: *****

Applicant: Purdue University (U336S190036)

Questions

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:

(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 for meeting statutory purposes and requirements.

Strengths:

(i) The applicant provides a Logic Model(pg.e110) that is informed by research and effective practice that identifies the inputs, outputs, activities, and short and mid-term outcomes. For example, the applicant will provide professional development onboarding activities as an input and outlines the activities to include recruitment and residency placement sites at schools that have mentors to support the transition. The proposed project design aligns with the overall goal of strengthening the educational outcomes of students by expanding the number and diversity of STEM teachers. The proposed project will provide support to STEM teachers by enhancing their understanding and knowledge as it relates to integrating engineering design into middle and high school teaching of science and math.

The applicant states that there is great demand for STEM teachers (specifically in the areas of math and science) across the state, and due to the gaps in the ability to meet the demand, the proposed project is needed to address these issues (i.e., professional development program for Grades 6-12). (pg. e21, 27, 110)

(ii) The applicant proposes to meet the stated outcomes by recruiting individuals with a strong academic or professional background and desire to pursue a career as a STEM teacher, but lack extensive teaching experience (e. 21, 110). The evidence shows a large number of emergency teaching permits requested each year (169 in the most recent year), and the need to fill the 15 vacancies in math at the targeted schools, the rationale for the proposed project is clearly identified (pg. e24-25).

The applicant identifies key project goals (i.e., increase the number of high-quality teachers well prepared to teach at the secondary level STEM curriculum in urban district). The objectives have been clearly defined (i.e., attract and recruit a diverse candidate pool, expansion of professional development opportunities to support teacher leaders and coaches). Some of the outcomes include 85% of teachers will meet the applicable State certification and licensure requirements, certified teachers apply STEM knowledge (pg. e58-60, 110).

(iii) The proposed project design has some aspects that can be used to build capacity as evidenced by the Teacher Residency Program that requires all participants to remain within the district for a minimum of three additional years after the residency completion. This will address the vacancy crisis of a lack of STEM teachers which the applicant indicates

as a challenge for the District. The applicant indicates that theirs is the first district in the State to develop an Opportunity Culture (i.e., model that leverages the impact of excellent teachers and their teams to reach more students) that is focused on investing in excellent teachers through training and development similar to the program proposes (pg. e47-48).

(iv) The applicant provides an exceptional approach and focuses on addressing retention issues in the school district. Some of the strategies for retaining teachers include resource and mentor teachers that will share responsibility for classroom instruction, adopting the co-teaching model, and by clustering the resident teachers in cohorts to assist with onboarding, coursework, and professional development activities for new teachers. The applicant will expand the residency model to include undergraduate students from the university currently pursuing teaching degrees, which is another strength as it provides these undergraduates with opportunities to participate in a full year of the residency program (pg. e37-39,48).

Weaknesses:

(i) No weaknesses noted.

(ii) No weaknesses noted.

(iii) While the applicant provides evidence of fostering a partnership with the school district to sustain and expand the teacher residency model, a clear plan for how they will build capacity beyond the period of federal financial assistance is not provided.

(iv) No weaknesses noted.

Reader's Score: 35

Selection Criteria - Adequacy of Resources

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

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

(ii) The relevance and demonstrated commitment of each partner in the proposed project to the implementation and success of the project.

Strengths:

(i) The applicant provides a letter from the university demonstrating their in-kind support to the project of \$594,568 (faculty salaries, benefits), which is more than appropriate to achieve the stated goals. The applicant identifies a number of faculty and staff who will provide support to include faculty from the College of Education who will provide support for Preservice Education and Education Reform (pg. e142).

(ii) The applicant documents sufficient evidence of in-kind support as evidenced by the letter of support from their district partner (Indianapolis Public School District). The in-kind support t includes salaries and professional development coaching that totals over \$9,797,745.36 over the five years of the proposed project (pg. e143-148). This in-kind resource is significant because the school district is committed to incurring a good percentage (minimum of 30% for some positions) providing staff to conduct professional development activities and to serve as math coaches, which further demonstrates their commitment to the project (pg. e144-146).

Weaknesses:

- (i) None noted.
- (ii) None noted.

Reader's Score: 20

Selection Criteria - Quality of the Management Plan

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

(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.

Strengths:

(i) The applicant presents a management plan that identifies activities throughout the year for each year of the program. For example, the applicant identifies the courses that will be provided in the teacher residency programs (pg.e31), and the activities that will take place each year of the grant during the Fall, Spring, and Summer (i.e., implement recruitment strategy, finalize curriculum

Weaknesses:

(i) The applicant fails to provide a management plan that identifies clearly defined responsibilities and milestones for completion. While the applicant identifies various activities that will take place each year during the Fall, Spring, and Summer, the details on who will be responsible and how it relates to the overall goals are not clearly described (pg. e111).

Reader's Score: 15

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:

(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 provides for both a formative and summative approach that is aligned with the Logic Model inputs, activities and outcomes which documents the data to be collected and its alignment to the project's goals. The collection and analysis of both qualitative and quantitative data will be done throughout the year along with interviews with staff to ensure that the project is moving towards the stated objectives (pg. e61-62, 67-69,110).

(ii) The applicant will have use of the Evaluation and Learning Research Center (ELRC) at the university to conduct a thorough and robust evaluation. The proposed evaluation will Mixed-Methods Case Study to estimate program impacts on student achievements (pg. e61, 65). The evaluation model includes formative progress monitoring which has the potential of providing value-added data and analysis (pg. e63, 67-69).

Weaknesses:

- (i) No weaknesses noted.
- (ii) No weaknesses noted.

Reader's Score: 20

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

- 1. Projects designed to improve student achievement or other educational outcomes in computer science by increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including computer science, through recruitment, evidence-based professional development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.**

Strengths:

The applicant provides sufficient evidence of a plan to address the Competitive Preference Priority. The strategies include a) increasing the number of educators prepared to deliver rigorous instruction in the STEM field (including computer science); and b) providing evidence-based professional development strategies for current STEM educators and for those individuals interested in pursuing a career in secondary STEM teaching (pg. e21-22, 24,26, 29).

Weaknesses:

No weaknesses noted.

Reader's Score: 5

Invitational Priority - Invitational Priority

- 1. An applicant may address one or both of the following priority areas:**

Propose to serve children or students who reside, or attend TQP project schools, in a qualified opportunity zone as designated by the Secretary of the Treasury under section 1400Z-1 of the Internal Revenue Code, as amended by the Tax Cuts and Jobs Act (Pub. L. 115-97). In addressing this priority, an applicant must provide the census tract number of the qualified opportunity zone for which it proposes to serve children or students and describe the extent to which the applicant will serve individuals in the Qualified Opportunity Zone(s). OR

Demonstrate in its application that it has received or will receive financial assistance from a qualified opportunity fund under section 1400Z-2 of the Internal Revenue Code, as amended by the Tax Cuts and Jobs Act, for a purpose directly related to its proposed project. In addressing this priority, an applicant must identify the qualified opportunity fund from which it has received or will receive financial assistance and describe the extent to which the applicant will use the financial assistance for its proposed project.

Strengths:

The applicant provides a list of Designated Qualified Opportunity Zones in the city and indicates that the targeted high school sits within those zones (pg.e107).

Weaknesses:

The applicant does adequately address this invitational priority as details on the priority areas they are proposing to serve are not clearly defined. The applicant provides a list of the Designated Qualified Opportunity Zones in the city and states that the targeted high school sits among the Opportunity Zone Boundaries. Moreover, the applicant does not provide information in the application that it has received or will receive financial assistance from a qualified opportunity fund (pg. e107).

Reader's Score: **0**

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Technical Review Coversheet

Applicant: Purdue University (U336S190036)

Reader #2: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Project Design	40	37
Adequacy of Resources		
1. Resources	20	20
Quality of the Management Plan		
1. Management Plan	20	17
Quality of the Project Evaluation		
1. Project Evaluation	20	20
Sub Total	100	94
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. STEM/Computer Science	5	5
Sub Total	5	5
Invitational Priority		
Invitational Priority		
1. Promise Zones	0	0
Sub Total	0	0
Total	105	99

Technical Review Form

Panel #9 - Teacher Quality Partnership - 1: 84.336S

Reader #2: *****

Applicant: Purdue University (U336S190036)

Questions

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:

(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 for meeting statutory purposes and requirements.

Strengths:

The application gives focused and comprehensive details that make the quality of the project design clear.

1. For example, the application contains a clear and easily understandable rationale. This can be seen in the description of the program intended outcomes. The application begins with a strong overview detailing opportunities within the partnering school district in which Resident Teachers will earn a Master's degree and K-12 Integrated STEM Degree Certificate, followed by a two-year induction program that will support up to 60 participants over 5 years as they develop the knowledge, skills, and dispositions of highly effective STEM teachers. The project was designed to embed the eight key characteristics of strong teacher residency programs, such as expert mentor teachers who co-teach with residents, ongoing mentoring and support for graduates, and equally importantly, significant financial support for residents in exchange for a 3-year teaching commitment in the district. (p. 3) In addition, there is the note that there are significant shortages of science, mathematics, and computer science teachers, not only across the state, but especially in the urban district to be served. Finally, the application notes that one means to improved student science and math achievement is to increase the number of qualified STEM and computer science teachers, and work to retain them (pp. 4-6).

2. The goals, objectives, and outcomes of the project are generally complete and well specified. For example, the project calls for strong goals found in five core principles: highly effective instruction in the STEM disciplines will be standards-based; learning is a process of knowledge construction; and highly effective teaching requires deep, flexible content and instructional knowledge. One other core principle is that teaching and learning is culturally inclusive, socially relevant and involved in real life contexts. (p. 9)

3. The proposed project provides a design that will build capacity and produce results beyond the end of funding. For example, the partnering school district will be implementing a teacher recruitment and retention policy in conjunction with the project called Opportunity Culture. An Opportunity Culture model can be seen to leverage the impact of excellent teachers and their teams by reaching more students, compensating excellent teachers more, and designing an innovative teacher leadership model. Investing in excellent teachers, especially financially, helps schools, creates empowered educators, and positively impacts teaching and student learning presently and likely into the future. (p. 28)

Based on the evidence provided, it seems likely that the project can achieve such outcomes as outlined. The project will help inform future work, as the district has taken the lead previously with its higher education partners to revamp its student teaching experience, and as a result, is now positioned to launch a teaching residency program in the hardest-to fill subject areas, including STEM subjects, across the district. (p. 6)

4. The project notes several features that may represent an exceptional approach for meeting grant goals and requirements. For example, the project is unique in that it addresses two challenges facing the proposed service area. One is the critical need for STEM education for struggling urban schools and their retention. (pp. 5-6) Another need addressed is in the arena of how to attract and retain STEM teachers. This project proposes providing a significant stipend of more than \$40,000 per year while participants are enrolled and committed to 3 years of service. Finally, the project is scheduled to be placed on a fast track for participants, so that they have completed their work after only 18 months. (p. 3)

Weaknesses:

1. No weaknesses found.
2. No weaknesses found.

3. Although the partners are invested in supporting this program beyond the life of the grant period, and the application notes that funding provided through this grant opportunity would serve as a catalyst to develop the infrastructure for a teacher residency program that can be expanded into more high need schools, there is a need for more details about how that would work, especially in the financial support realm. (pp. 40-41)

4. Although the project design is well written, the application needed a more thorough explanation of the qualities of the project that could make it an exceptional approach, such as its inclusion of culturally inclusive teaching practices. (p. 15) Another area that might have helped the application meet the standard for an exceptional approach would to be include some means by which the project reaches out business and industry to garner their interest and support. (p. 30)

Reader's Score: 37

Selection Criteria - Adequacy of Resources

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

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

(ii) The relevance and demonstrated commitment of each partner in the proposed project to the implementation and success of the project.

Strengths:

1. The application provides a more than adequate description of the resources that will be provided by the lead organization. One important resource is that the university has a great deal of experience in receiving and managing large grants from various funders for its STEM-related initiatives such as Project Lead the Way. In addition, it is the managing partner of the Indiana STEM Resource Network, a statewide partnership of public and private higher education institutions, K-12 schools, business, and government. This network supports K-12 schools working to implement high academic standards towards STEM literacy for all students through professional development and resources for teaching.

(pp. 30-31) The university has office space and appropriate facilities and equipment, including computers. (pp. 32-33) The university also has a full-time technical support staff to aid students, faculty, and staff. (p.33)

2. The application provides appropriate and adequate descriptions of the commitment and relevance of partners in the project. For example, the partnering school district is offering substantial support in facilities, equipment and other resources. Other resources include significant involvement in the leadership and management of the project, especially in the support from the Human Resources department and for the onsite and day to day management of the project, with specially chosen personnel. The high need LEA will have staffing dedicated to the project at the district level as well as at the identified high need schools. The district has identified several critical staff to help support the program's development and implementation. Among the district's personnel contributions will be support from the Human Resource Officer, Clinical Prep Teacher Leader, Executive Director of Professional Learning, Senior Coordinator of Talent Acquisition, and Teacher Development and Mentorship and a Teacher on Special Assignment. (p. 38)

Weaknesses:

No weaknesses found from 1 and 2.

Reader's Score: 20

Selection Criteria - Quality of the Management Plan

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

(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.

Strengths:

The management plan is largely well detailed and wide-ranging. It will provide for focused and comprehensive program oversight and guidance. As a result of the management plan, it is clear that the potential project has the optimum chance for success with the project being completed on time and within budget. For instance, strategic planning and evaluation will take place throughout the duration of the project. Outreach and recruitment will be targeted during the spring of each of the four years of the project. (pp. 23-25) These activities will lead to outcomes such as increased student academic progress, more diverse and highly qualified teachers with needed content expertise, and a foundation of exceptional teachers retained in their high-needs schools. (pp. 40-41)

Also, the project evaluator will work with project team members and provide quarterly reports on progress towards project goals and make recommendations based on feedback and data to support program improvement over the grant period. Other aspects of the project's management will facilitate program effectiveness and provide ways for stakeholders to give input and guidance into operations and management. For example, key players in this project will have ample opportunities to provide ongoing feedback to inform program management; project outcomes relative to teachers participating in the residency programs; the students they teach; the mentors that work with the residents; and the school district implementing this model. The study design will compare comparable non-participant teachers and their students to teachers participating in the residency program and their students. (pp. 42-43)

Weaknesses:

The management plan is somewhat lacking in detail. For example, the project cites three major goals, one of which is ensuring the sustainability of the program. More details on how this major goal will be reached, who would be responsible for its achievement, and the timeline and milestones for it would have been helpful. (pp. 40-41)

Reader's Score: 17

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:

- (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:

1. The methods for evaluation of the project are complete, detailed, thorough, and will provide valuable and crucial performance data to guide the program to success. For example, data collection for the evaluation will involve quantitative and qualitative approaches. The activities and goals of the project evaluation are to ensure that project implementation and its evaluation are aligned. To accomplish this task, the evaluation team will seek comprehensive data and use this to develop a comprehensive mixed-methods evaluation plan. In addition, the evaluators plan on offering regular recommendations to the management team during implementation on their policies and actions as well as other factors that might impact the project's strength and validity. The university's Evaluation and Learning Research Center (ELRC) will conduct the project evaluation. The ELRC is a campus-wide asset focusing on effective education research and evaluation using evidence-based approaches. The reports produced will provide a third-party, non-biased summary of project results, challenges and successes and recommendations and findings that will not be subjected to the approval of anyone in the leadership of this project. This third-party component will aid substantially in the collection of valid and reliable performance data on the project's goals and outcomes. (pp. 41-43)

2. The methods of evaluation are comprehensive, thorough, and completely feasible, and will provide strong documentation regarding program goals and outcomes. Among the methods of evaluation that demonstrate the depth and quality of the evaluation are to meet monthly with the management team to provide feedback and ensure implementation fidelity; collect and analyze both qualitative and quantitative data; and conduct annual comprehensive reviews of program data, reports, and related documents. In addition, the project will include interviews with key sources and all stakeholders. (p. 42) External evaluation to determine the overall effectiveness of the program on participating teachers, teacher-mentors, and impacted students will also be conducted. (pp. 42-43)

Weaknesses:

- 1. No weaknesses found.
- 2. No weaknesses found

Reader's Score: 20

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

1. **Projects designed to improve student achievement or other educational outcomes in computer science by increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including computer science, through recruitment, evidence-based professional development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.**

Strengths:

The application notes many ways that the project is designed to meet criteria here. For example, the project notes that it will “by preparing top-tier 21st Century STEM teachers to teach a STEM content, skills, and practices through the integration of engineering design in culturally and socially relevant ways, teachers will have highly positive impact on elevating K-12 STEM learning.” (p. 2)

Weaknesses:

No weaknesses found.

Reader's Score: 5

Invitational Priority - Invitational Priority

1. **An applicant may address one or both of the following priority areas:**

Propose to serve children or students who reside, or attend TQP project schools, in a qualified opportunity zone as designated by the Secretary of the Treasury under section 1400Z-1 of the Internal Revenue Code, as amended by the Tax Cuts and Jobs Act (Pub. L. 115-97). In addressing this priority, an applicant must provide the census tract number of the qualified opportunity zone for which it proposes to serve children or students and describe the extent to which the applicant will serve individuals in the Qualified Opportunity Zone(s). OR

Demonstrate in its application that it has received or will receive financial assistance from a qualified opportunity fund under section 1400Z-2 of the Internal Revenue Code, as amended by the Tax Cuts and Jobs Act, for a purpose directly related to its proposed project. In addressing this priority, an applicant must identify the qualified opportunity fund from which it has received or will receive financial assistance and describe the extent to which the applicant will use the financial assistance for its proposed project.

Strengths:

One of the schools to be served in IPS as part of the project is located in an Opportunity Zone. (p. 28)

Weaknesses:

No weaknesses found.

Reader's Score: 0

Status: Submitted

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Status: Submitted

Last Updated: 08/08/2019 02:02 PM

Technical Review Coversheet

Applicant: Purdue University (U336S190036)

Reader #3: *****

	Points Possible	Points Scored
Questions		
Selection Criteria		
Quality of Project Design		
1. Project Design	40	35
Adequacy of Resources		
1. Resources	20	20
Quality of the Management Plan		
1. Management Plan	20	15
Quality of the Project Evaluation		
1. Project Evaluation	20	19
Sub Total	100	89
Priority Questions		
Competitive Preference Priority		
Competitive Preference Priority 1		
1. STEM/Computer Science	5	5
Sub Total	5	5
Invitational Priority		
Invitational Priority		
1. Promise Zones	0	0
Sub Total	0	0
Total	105	94

Technical Review Form

Panel #9 - Teacher Quality Partnership - 1: 84.336S

Reader #3: *****

Applicant: Purdue University (U336S190036)

Questions

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:

(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 for meeting statutory purposes and requirements.

Strengths:

(i) The application has provided a convincing rationale for the project in the context of the survey of the target area (pages e22-230). The need for well-trained STEM teachers is evident in the increasing need for STEM professionals in health and life sciences (page e23) and the large concentration of students in poverty in the urban area schools where quality education is a challenge (page e23-24). For example, 65% of Indiana Public School students qualify for free and reduced lunch. Moreover, the target area in general is experiencing shortage of qualified STEM teachers with a high turn-over. For example, the teacher application notes that schools within the city, such as Arsenal Technical High school with 13 vacancies, lack individuals qualified in mathematics (page e25). The logic model on page e110 also provides a comprehensive rationale by identifying outcomes that are pertinent to area needs. The strength of the rationale is the implementation of a revamping of the teacher training program for effectiveness in recruiting hardest to fill STEM subject areas, and augment teacher training research (page e26).

(ii) The application has provided specific goals for the teacher quality partnership on pages e58-e60. The three main goals cover the gamut of increasing the number of high-quality teachers in goal # 1, enhancing academic achievement of students in goal # 2, and finally creating a sustainability plan for the project in goal # 3. For each of these goals, the application has provided specific objectives. For example, goal # 2 objectives include increased growth in ILEARN in classrooms with residency teachers, and growth in NWEA scores among students in classrooms with residency teachers. In the abstract on page e16, the application specifies that the project will serve 60 participants through five years and seek to retain 80% of resident teachers in the program for at least three years.

(iii) The applicant has made a satisfactory description of building capacity and yielding results for the project (pages e47-e48). The application stipulates the project will manifest capacity-building in addressing scarcity in employment, and improved teacher retention rates in critical STEM areas. The project opportunity culture model will help in attracting talent within the area to provide local resources. Moreover, the Purdue undergraduate and graduate preservice teachers pursuing Indiana State Licensure will have the opportunity to be placed in IPS schools for a full year residency during their teacher preparation program. The project thus has an inherent design of capacity building for both the target area as well as the teacher training program of the lead applicant.

(iv) The application has successfully described how the exceptional nature of the project lies in its unique approach to the preparation of teachers to understand/use research data to improve instruction; alignment with state academic standards; alignment with state early learning standards for ECE programs, as appropriate, and the preparation of general education teachers to teach special populations such as students with disabilities, and students who are limited English proficient (pages e40-e42). Moreover, the project uniquely also discusses the core issue of retention of quality teachers and the project provides specific methods to address this issue. For example, based on research the project seeks to provide two effective strategies: instructional resource teachers and peer collaboration (page e37). The application thus has provided a comprehensive discussion of how the project can be considered exceptional.

Weaknesses:

(i) No weaknesses noted.

(ii) The application has not integrated the project goals and objectives into the project framework. The project goals are not established clearly as measurable beyond the number of participants and the rate of retention (page e16). For example, the application has not discussed specific outcomes for the academic improvement of students where the teacher trainees will work, or specific outcomes that cover goal # 3 of sustainability. Moreover, it is not clear about how the project goal of retention of teacher trainees affects the overall project conceptual model.

(iii) & (iv) No weaknesses noted.

Reader's Score: 35

Selection Criteria - Adequacy of Resources

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

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

(ii) The relevance and demonstrated commitment of each partner in the proposed project to the implementation and success of the project.

Strengths:

(i) The application has provided sufficient details of institutional support to the project (pages e48-e52). Project participants and partners will have access to large classrooms, office buildings, classrooms and computer laboratories, a multi-purpose rooms that support both students and faculty, and facilities for centers and laboratories. Moreover, the College of Education Technology Resources Center (TRC) houses a variety of information resources and teaching/learning technologies for both students and faculty members. The project staff will have dedicated space equipped with secure data storage facilities, the requisite computational facilities (hardware and software) including desktops, laptops, and SPSS and SAS computational packages.

(ii) The application has provided a brief narrative of support from two main partners: Purdue University and Indianapolis Public Schools (IPS) (pages e52-e53). The application has stipulated that the project will leverage leadership teams from both organizations to ensure successful development and implementation of this program. The lead agent through the Center for Advancing the Teaching and Learning of STEM (CATALYST) will take the lead in managing and administering the ISTR Program. Appendix J on page e158 will summarize the partnership hierarchy effectively. On page e150, the letter of support from interim superintendent of the Indianapolis public schools stipulates a support from district administration.

Weaknesses:

(i) & (ii) No weaknesses noted.

Reader's Score: 20

Selection Criteria - Quality of the Management Plan

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

(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.

Strengths:

(i) The application has provided a functional management plan (pages e52-e60). The application has described a strong Project Team with qualified staff. For example, the team consists of a qualified project director with significant STEM exposure, and a project manager who has experience as a GEAR UP director. The staff also includes an effective teacher training coordinator. The application has identified critical project staff for effective implementation such as a Teacher Preparation coordinator who will be a point of contact with the school district. On page e58, the application also discusses a professional development plan for the district. On page e111, the application has provided a brief timeline of project activities through the semesters in four years.

Weaknesses:

(i) The application management plan does not align project activities with project objectives as provided on pages e59-e60. It cannot be thus verified if the project objectives will be implemented within time and budget (pages e52-e60). Moreover, the management plan has not distinguished between activities and milestones (page e111). In the absence of clear milestones, the project management plan does not have clear targets to ensure timely and productive implementation and if the yearly progress of the completion of project tasks will be completed.

Reader's Score: 15

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:

(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 application provides for a strong evaluation plan (page e60-e69) that involves the effective use of a multi-level evaluation by the Evaluation and Learning Research Center (ELRC). The strength of the evaluation plan is that it is holistic and consists of a mixed-methods approach with detailed plan for feedback, implementation fidelity and the effective use of qualitative and quantitative data such as surveys, interviews/focus groups, standardized assessments, classroom observations, course documents, course evaluations, and online course usage to establish program efficacy

(page e61-e63). Care will be taken to meet the evaluation objective (page e62). The project evaluation plan has validity inherently built as it includes the use of a quasi-experimental, pretest-posttest control group design to evaluate and compare between- and within group differences on key study variables (page e62). The assessment instruments used include Charlotte Danielson's Framework for Teaching (FFT), state academic standards ILEARN and Measures of Academic Progress (MAP) (page e64).

(ii) The project evaluation has clearly demonstrated the use of thorough, feasible and goal-based methods to gather data and provide useful evaluation. Table 6 on pages e67-e69 provides an exhaustive discussion of data collection and analyses methods base on project goals and objectives. For example, goal # 2 of the application specifies that student academic data will be collected through ILEARN and MAP, the analysis will be based on quasi-experimental design, and measurable outcomes include achievements in critical areas of math and science. The evaluation team will also prepare annual evaluation reports, along with periodic reports based on specific data collection efforts.

Weaknesses:

(i) No weaknesses noted.

(ii) The application does not provide a timeline of project evaluation. Moreover, the project evaluation also does not have a strong component of dissemination of evaluation data and reports (pages e60-e69). This will potentially affect the use of evaluation findings.

Reader's Score: 19

Priority Questions

Competitive Preference Priority - Competitive Preference Priority 1

- 1. Projects designed to improve student achievement or other educational outcomes in computer science by increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including computer science, through recruitment, evidence-based professional development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.**

Strengths:

The application has adequately addressed this competitive preference priority. The priority is embedded in the overarching vision of this project is to strengthen the educational outcomes of students by preparing culturally competent, highly qualified career teachers for science (including chemistry, computer science, earth science, life sciences, and physics), technology, engineering, and mathematics (STEM) areas (page e21). This project will accomplish this goal by expanding the number and diversity of individuals possessing a strong academic or professional background and developing enhanced knowledge, skills, and disposition for integrating engineering and technology design into science and mathematics instruction through project-/problem-based, inquiry-oriented approaches. Moreover, the project design includes an integrated K-12 STEM Degree certificate for participants. The priority is also included in integrating science inquiry, engineering and technology design and practices, and/or mathematical problem solving (page e28). The project administrators are also STEM professionals. Thus, the competitive preference priority is adequately integrated into the overall project design.

Weaknesses:

No weaknesses noted

Reader's Score: 5

Invitational Priority - Invitational Priority

1. An applicant may address one or both of the following priority areas:

Propose to serve children or students who reside, or attend TQP project schools, in a qualified opportunity zone as designated by the Secretary of the Treasury under section 1400Z-1 of the Internal Revenue Code, as amended by the Tax Cuts and Jobs Act (Pub. L. 115-97). In addressing this priority, an applicant must provide the census tract number of the qualified opportunity zone for which it proposes to serve children or students and describe the extent to which the applicant will serve individuals in the Qualified Opportunity Zone(s). OR

Demonstrate in its application that it has received or will receive financial assistance from a qualified opportunity fund under section 1400Z-2 of the Internal Revenue Code, as amended by the Tax Cuts and Jobs Act, for a purpose directly related to its proposed project. In addressing this priority, an applicant must identify the qualified opportunity fund from which it has received or will receive financial assistance and describe the extent to which the applicant will use the financial assistance for its proposed project.

Strengths:

The application specifies that it will address the invitation priority Spurring Investment in Opportunity Zones on page e21.

Weaknesses:

The application has not specified the census tract number of the qualified opportunity zone for which it proposes to serve children or students and described the extent to which the applicant will serve individuals in the Qualified Opportunity Zone(s).

Reader's Score: 0

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