

EXCITE AND IGNITE: BUILDING THE NEXT GENERATION OF TEACHERS

Project Narrative

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PROJECT DESCRIPTION

Excite and Ignite: Building the Next Generation of Teachers (NextGen) is a proposal submitted by the Urban Teacher Education Program (UTEP), a division of the Department of Urban Education at Rutgers University-Newark, to enhance the teacher preparation training as well as to strengthen the quality of its graduates in improving student learning and achievement. UTEP will partner with Newark Public Schools (NPS) in general, East Side High School (ESHS) in particular, and the Liberty Science Center (LSC) to design a high quality teacher preparation program that trains prospective teachers to teach effectively and improve student achievement.

This proposal will demonstrate how UTEP will meet: *1) Absolute Priority 1: Partnership Grants for Preparation of Teachers, 2) Competitive Preference Priority 1: Promoting Science and Technology, Engineering, and Mathematics (STEM) education, and 3) Competitive Preference Priority 2: Implementing Internationally Benchmarked, College and Career Ready Elementary and Secondary Academic Standards.*

NextGen Partners:

Teaching is intellectually complex and demanding.¹ Teachers need to be sound architects of daily instruction, which requires designing curricula that are congruent with state and district standards, planning for student motivation and engagement, designing effective instruction using assessment to inform practice, and developing management skills.² To enhance teacher preparation in general and in STEM, in particular, UTEP has gathered a team of like-minded individuals who believe training prospective teachers is a shared responsibility of institutions of

¹ Saphier and Gower 1997, 12

² Saphier and Gower 1997, 6

higher education, secondary schools, and informal learning environments, such as museums.³

The NextGen partners (UTEP, ESHS and LSC) believe that together they have the expertise, authority, and resources to create structures and opportunities to grow and sustain and bring out the best in our future educators.⁴

NextGen's premise is building a better teacher through a coherent, content-rich curriculum with literacy at the core, an enriched clinical experience, and support through the first two years of teaching. The partnership will provide instruction for meeting the needs and demands of all learners, and in particular, for the diverse learners. UTEP will also provide a new training for STEM educators in both informal and formal settings, known as *t*STEM. Additionally, UTEP and LSC Center will offer a unique certificate to its graduates in *t*STEM. It is the intention of this collaboration to serve as a local, state, national and international model of a highly effective teacher preparation program.

For the purpose of this proposal, it will be helpful to define what UTEP means by 'diverse learners', which is used frequently. For UTEP, the term 'diverse learners' includes, but is not limited to: students from various socioeconomic, racial, ethnic and religious backgrounds; students with physical, learning, and intellectual differences; and students with limited English proficiency.⁵

Building the NextGen Teacher:

For the past six years, UTEP has been working closely with ESHS as a learning site for our pre-service teachers. With funding from this proposal, UTEP will create a professional

³ A Blue print for Respect 2013

⁴ Nemser-Feinman 2001

⁵ Smith et al. 2004, 41

learning community that brings together a high school, a teacher preparation program, and an informal learning environment. These three pillars of education will create a new symbiotic way of training pre-service teachers to prepare *ALL* of their future students for college and careers in a global, digital society. Already, UTEP has assembled a planning team to look at the secondary school environment in light of district, state, and national standards and initiatives. This team has been targeting what it means to be profession-ready and begun to develop a curriculum for meeting the national call for strengthening teacher preparation.⁶

The three overarching goals of NextGen are to: 1) improve student achievement; 2) strengthen the quality of prospective teachers in general, and STEM in particular; and 3) fulfill a critical need for teachers in high needs areas for urban districts and in STEM. The following objectives will guide the activities of NextGen:

1. Revise UTEP's curriculum: UTEP will refine its curriculum to include: 1) developing guiding and measuring outcomes for each cluster of courses, 2) implementing of standards-based curriculum, 3) training for effectively diagnosing and effectively providing instruction for all students, and in particular, diverse secondary students, including instruction for students with disabilities and limited English proficiency students, 4) creating a *t*STEM curriculum integrating informal and formal settings and 5) training for effective use of technology.

2. Implement effective recruitment and enrollment campaign: UTEP will develop and implement a new recruitment campaign aimed at high schools and two-year community colleges.

⁶ White House Factsheet: Taking Action to Improve Teacher Preparation 2014

3. Revise the Clinical Experiences: Through NextGen, UTEP will create a cohesive yearlong clinical experience.

4. Implement an Induction Program: UTEP will establish a professional learning community for all its graduates during the first two years of in-service based at East Side High School.

About the Urban Teacher Education Program at Rutgers University-Newark:

Rutgers University-Newark (RU-N) is a leading public research university that has a long and proud tradition of providing a first-rate education to students of modest means, to first-generation college attendees, and to students of diverse racial, ethnic, and religious backgrounds.⁷ *US News* and *World Report* have voted RU-N as the most diverse campus for the last seventeen years.⁸

UTEP is one of three units housed in the Department of Urban Education in RU-N's Faculty of Arts and Sciences. It is an undergraduate, 30-credit course of study that leads to a New Jersey State Teacher Certification in a content area for general education teachers.⁹ By definition, our graduates become highly qualified teachers upon graduation as they meet certification requirements, receive a bachelor's degree, and pass the required Praxis II exam in their particular content areas. The program is designed to lead pre-service teachers through a series of nine courses organized into four clusters, each building on the previous one and ending with a semester of student teaching in Newark Public Schools (NPS). As part of the coursework,

⁷ Information about Rutgers University-Newark

⁸ Rutgers University-Newark US World News Ranking

⁹ Rutgers University-Newark UTEP Website

prospective teachers enrolled in UTEP are exposed to the complexities of teaching in urban schools, and in particular the affordances offered in these settings.

On May 13, 2014, the New Jersey Department of Education launched its first Educator Preparation Provider (EPP) Annual Report.¹⁰ The annual reports are “not designed for accountability purposes. Rather, they summarize and share available data.”¹¹ According to the 2014 EPP Report, 72% of UTEP’s program completers who received certification in the past three years are teaching in a NJ public school. (The state average is 32% for all NJ EPPs). Eighty-two percent of recently certified novice teachers from RU-N teach in schools where teachers are eligible for the Federal Teacher Loan Forgiveness Program (i.e. at least 30 percent of the school’s population is eligible for free or reduced price lunch).¹² This is significantly higher than comparable statewide percentages. According to the 2014 report, 48% of novice teachers and 44% of all teachers work in high needs schools. This appears to suggest that UTEP’s graduates are indeed seeking and securing teaching positions in urban communities.

UTEP’s mission is to prepare critically reflective pre-service teachers who are equipped to teach a racially, ethnically, economically, and linguistically diverse student population. Our goal is to help prospective general education teachers create learning environments consistent with state and national standards, and learn to develop an *emotionally safe environment*. In such environments, students would feel freer to question ideas and openly discuss understandings and misunderstandings, without risk or fear of embarrassment or humiliation.¹³ They would be free

¹⁰ NJ DOE Educator Recruitment, Preparation, and Recognition Report

¹¹ NJ DOE Educator Recruitment, Preparation, and Recognition Report

¹² NJ DOE Educator Preparation Provider 2014 Annual Report

¹³Schorr et al. 2010

to offer ideas, struggle with standards based problems, and experience the perseverance needed to successfully and meaningfully learn cognitively complex ideas.

To accomplish this mission, UTEP ensures that pre-service teachers obtain a satisfactory level of mastery of *our* six principles of teaching known as **SUPER6**. UTEP's mission statement and SUPER6 reflect the Interstate Assessment and Support Consortium Model Core Teaching standards,¹⁴ The New Jersey Professional Standards for Teachers¹⁵ and Teacher Education Accreditation Council's Quality Principle 1¹⁶ for preparing competent, caring, and qualified educators. These principles encapsulate what UTEP and the profession believe to be the core teaching proficiencies of an effective urban educator. Additionally, **SUPER6** provides all stakeholders a common language when discussing practice.¹⁷ Table 1 shows the **SUPER6** principles and accompanying summative statements for each. (A comprehensive description of SUPER6, including a descriptive paragraph, a summative statement, and specific indicators are located on UTEP's website: <http://www.ncas.rutgers.edu/urbaned>.)

It should be noted that in order to show mastery of *Principle 1: Subject Matter Knowledge*, pre-service teachers must pass the Praxis II in their content area, which is a NJ requirement for receiving teaching certification. For the past three academic years, 100% of UTEP graduates have met this condition.

¹⁴ Council of Chief State School Officers- InTASC 2011

¹⁵ NJ Professional Standards for Teacher 2014

¹⁶ TEAC's Quality Principle 1

¹⁷ Nemser-Feiman 2001, 1024

Table 1: SUPER6 Principles with Summative Statement

SUPER6 Principle	Summative Statement
P1: Subject Matter and Curriculum Aptitude	Teacher candidates know and understand the content area for which they are seeking New Jersey teacher certification.
P2: Understanding Your Learner	Teacher candidates understand the development of learners and value the diversity of the students they teach.
P3: Pedagogical Content Knowledge	Teacher candidates plan and deliver effective instruction that advances the scholarship of each individual learner.
P4: Evaluation of Achievement	Teacher candidates understand and use varied assessments to inform instruction, evaluate and ensure student learning.
P5: Readiness for Establishing and Maintaining Effective Learning Environments	Teacher candidates create learning environments that promote high levels of learning and achievement for all learners.
P6: Educational Professionalism	Teacher candidates understand the responsibility for their professional growth, performance and involvement as an individual and as a member of a learning community.

SIGNIFICANCE

Novice teachers are entering the complex field of education needing a multitude of skills. Effective educators must master the knowledge in their content area, utilize diverse teaching and learning strategies, and prepare students to enter the multidimensional work force of the 21st century. Most importantly, they must know, understand, and possess the knowledge and skills to address the learning needs of the diverse students in their classrooms. Under NextGen, UTEP will provide the much-needed missing link: a well-informed, mission and results-driven urban teacher preparation program developed in collaboration with the Newark Public Schools (NPS), East Side High School (ESHS), and Liberty Science Center (LSC) that reflects the needs of NPS and aligns closely with New Jersey Department of Education’s direction for teacher preparation policy initiatives.¹⁸

Over the course of the next five years, the NextGen partnership will recruit, prepare, and

¹⁸ NJ DOE direction for teacher preparation policy initiatives

mentor seventy-five new teachers who will provide high-quality inquiry-based forms of instruction to result in improved student performance and achievement. UTEP will achieve its goals (refer to pages 3-4) by creating a premier teacher preparation program in accordance with national, state, and district reforms. Additionally, NextGen is dedicated to recruiting and training undergraduate students majoring in mathematics and science to become highly effective secondary teachers. NextGen will incorporate an innovative program designed to train secondary general education teachers, particularly in mathematics and science, with content specific pedagogical courses, literacy at the core of instruction, a yearlong residency in formal and informal settings, community building activities and intense student advisement and support. Prospective teachers will be better able to provide effective instruction to diverse audiences in general. After the program, graduates and first year teachers at ESHS will participate in an induction program, thus ensuring that novice teachers are supported.

Needs Assessment: UTEP

UTEP has three sources informing its needs assessment: Council for the Accreditation of Educator Preparation (TEAC Legacy) Inquiry Brief, Title II Institutional and Program Report Card (IPRC), and the recently formed NextGen team.

UTEP's 30-credit course of study consists of four discrete phases of study. Cluster I courses inform pre-service teachers about the foundations of education in the United States and the development of the adolescent, as well as build an understanding of urban environments. In Cluster II courses, pre-service learn how to use instructional technology and evaluation. Cluster III courses explore curriculum design and bridge content knowledge with pedagogical practices. Cluster IV courses provide pre-service teachers with field experiences in secondary classroom

settings in Newark, NJ, including student teaching. Table 2 below outlines the structure of UTEP's cluster of courses.

Table 2: Structure of UTEP's Secondary Education Program

Cluster I: Educational Foundations Courses	Social Foundations of Urban Education (21:300:292) 3 credits – <i>Fall/Spring</i> <i>*Gateway course: While in this course students apply to UTEP.</i>	Adolescent Psychology and the Urban Experience (21:300:295) 3 credits – <i>Fall</i>	21 st Century Urban Educator (21:300:298) 3 credits – <i>Spring</i>
Only teacher candidates that have been accepted to UTEP are allowed to advance in the program.			
Cluster II: Developmental Courses	Information and Communication Technology for Secondary Schools (21:300:410 / NJIT ESTS410) 3 credits – <i>Fall</i>	Understanding Educational Evaluation (21:300:390 / NJIT ESTS390) 3 credits – <i>Spring</i>	
Cluster III: Curriculum and Pedagogy Courses	Curriculum and Instruction (21:300:388) 3 credits – <i>Fall</i>	Methods of Teaching (21:300:386) 3 credits – <i>Spring</i>	
Teacher candidates are screened to ensure they meet the entry requirements for clinical courses.			
Cluster IV: Clinical Courses	Clinical I: Practicum Seminar (21:300:418) 2 credits & Practicum Experience (21:300:419) 1 credit <i>co-requisites – Fall/Spring</i>	Clinical II: Student Teaching Seminar (21:300:487) 3 credits & Student Teaching Experience (21:300:488) 3 credits <i>Co-requisites – Fall/Spring</i>	
Teacher candidates are eligible to be recommended for NJ teacher certification after the successful completion of all nine courses with minimum of B in each and all the requirements for Clinical II Seminar and Clinical II Field Experience, as well as submission of passing PRAXIS II score.			

The Teacher Education Accreditation Council (TEAC) accredited UTEP with Initial Accreditation in 2009. This past spring, UTEP submitted its Inquiry Brief and completed its audit for re-accreditation. UTEP will be recommended to the CAEP/TEAC legacy panel for full accreditation with “clean audit opinion.”¹⁹ As part of the Inquiry Brief development, UTEP gathered data on its graduates from the previous three academic years, reviewed and analyzed

¹⁹ Ray Francis, email to authors, June 25, 2014

the data, and determined the needs moving forward. UTEP used a number of sources of data, external and internal, to show the extent to which its graduates meet the set criteria based on the established principles of teaching. Program graduates overwhelmingly met UTEP's criteria.²⁰

A close examination of the data from the summative field evaluations, the final component of the clinical experiences (*Clinical II: Student Teaching*), revealed areas of improvement for the program. The analysis showed a need for greater inter-rater reliability among the clinical evaluators and better alignment of coursework with field experiences. It underscored the need to make the clinical experiences more coherent and to build SMART assignments for each course closely aligned with UTEP's desired outcomes.

In completing the Title II's IPRC this past spring, UTEP's faculty examined syllabi to measure the extent to which the program prepares prospective general education teachers to provide instruction to students with disabilities, limited English proficient students, students from low income families, and in urban schools. This process revealed the need to improve the training of our pre-service teachers in these important areas.

In May 2014, UTEP assembled a planning team for NextGen, which includes members of ESHS, where most of our pre-service teachers are placed for clinical experiences. The ESHS team members identified areas of need based on the school's diverse learners and current preparation of UTEP graduates. In addition to the need for literacy training in all content areas, the team stressed the urgency to improve preparation to provide instruction to students with disabilities and to limited English proficient students. The team devised changes for the clinical experiences to make it a more coherent sequence and productive experience for both pre-service teachers and cooperating (in-service, mentor) teachers. Lastly, the team has shared observations

²⁰ UTEP's Inquiry Brief March 2014

on the mentoring of novice teachers, reflecting on lessons learned and desired components for an effective induction program.

NextGen, then, is well positioned with program data to make decisions about curricular and programmatic changes to enhance the preparation of pre-service teachers enrolled in UTEP.

Needs Assessment: Newark Public Schools and East Side High School

The City of Newark is New Jersey’s largest city, with a population of 278,000 in 2012.²¹ Located approximately fifteen miles from New York City, Newark is designated a “distressed city” and exemplifies the poverty and political isolation characteristic of large American cities. Newark’s 2012 median household income was \$31,293, while the NJ and US median household incomes for 2012 were \$69,667 and \$51,371 respectively.²² In addition, a third of Newark’s children (32.9%) live below the poverty line, compared to 13.2% in NJ.²³ According to census statistics, 47% of the Newark population five years old and over spoke a language other than English at home.²⁴

NPS, the largest school district in New Jersey, is a high-need LEA as reflected in its poverty rate.²⁵ In the academic year 2013-2014, NPS served a diverse population of 38,150 students in 71 schools. Table 1 gives a profile of some key characteristics of the NPS student population in the academic year 2012-2013. Approximately 89% of NPS students in 2012-13 were from families with incomes low enough to qualify them for federal free or reduced-price

²¹ US Census Bureau Information

²² US Census Bureau Home Income 2013 Report

²³ Newark NJ Poverty Rate Data

²⁴ US Census Bureau Information

²⁵ NJ DOE take-over of NPS 1994

lunch. As shown, 92% of students were of racial/ethnic minority backgrounds.²⁶ About 61% of students were speakers of home languages other than English, and 14% were classified as special needs students.²⁷

East Side High School (ESHS) is an NPS comprehensive high school covering grades ninth through twelfth that enrolls over a thousand students on a yearly basis. ESHS provides an array of curricular, co-curricular, extra-curricular, and athletic options for its students. The school enjoys an ethnic/racially diverse and multi-lingual student population, reflecting the community where it is located.

Table 3 below shows profiles of student populations for New Jersey, NPS, and ESHS.

Table 3: Profile of 2012-2013 NPS and ESHS Student Population²⁸

Population Group	Racial/Ethnic Minority Backgrounds	Qualify for Free and Reduced-Price Lunch	Limited English Proficient	Individualized Educational Programs
New Jersey Enrollment=1,373,182 Grades: preK-12	50%	37%	4%	16%
Newark Public Schools Enrollment=36,427 Grades: preK-12	92%	89%	9%	9%
East Side High School Enrollment=1,479 Grades: 9-12	68%	86%	18%	14%

²⁶ Newark Public Schools Data 2013 and NJDOE Data

²⁷ NJ DOE Data 2013; NJ DOE Data 2012; NPS Data Snapshot 2011-2012; NJ DOE Data Snapshot 2012-2013

²⁸ NJ DOE Data 2013; NJ DOE Data 2012; NPS Data Snapshot 2011-2012; NJ DOE Data Snapshot 2012-2013

Given the profile of the student population, NPS and ESHS strive to recruit and retain high quality and highly qualified teachers who understand and can serve their students and who are willing to make a commitment to teaching, as well as the partnerships to provide mentoring and professional development to retain these high-quality teachers.

Relevance of STEM training:

With U.S. students scoring lower than expected in science and mathematics for a leading nation in STEM (Science, Technology, Engineering and Mathematics) fields, enhancing the skill and lesson repertoire of STEM educators is a clear area of focus in ameliorating this issue. Liberty Science Center, a science museum located in Jersey City, New Jersey, has a long history of facilitating professional development for K-12 teachers in the NJ/NY metropolitan area. Many of these educators teach in school districts that are challenged by low socio-economic status and low scores on standardized testing. In 2010, President Obama addressed the Nation's school districts, stressing the importance of a good science education, rooted in funded STEM programs and in competent teaching. NextGen will aid in improving STEM education by providing relevant and in-depth workshops that reinvigorate teachers' passion for effective, hands-on science education.

PROJECT DESIGN

Daily, teachers are confronted with myriad situations that can prove both rewarding and challenging at times. These are just a few of the situations to which we refer: academic achievement among students, limited resources, overcrowded classrooms. To ensure the success and retention of novice teachers, UTEP through NextGen will design a new teacher preparation

program that places the 9-12 learner at the center. Additionally, it will train a new type of STEM educator in both formal and informal learning environments.

Using the academic and instructional needs from New Jersey's Department of Education policy initiatives and the city of Newark, NextGen's planning team has begun to outline the different components to address its three overarching goals and objectives (see pages 3-4). The NextGen partnership has created a continuum in teacher preparation by targeting prospective applicants through recruitment, pre-service teachers through coursework and clinical experience, and in-service teachers through a two-year induction. UTEP's curriculum will place literacy at the core of curriculum, be based in career and profession ready academic standards²⁹ as well as train prospective teachers in proven strategies. Ultimately, NextGen seeks to prepare educators who will possess the skills and knowledge to effectively teach a diverse range of learners.

Theoretical Framework for NextGen and iSTEM:

UTEP brings together many disciplines to create the Next Generation of Teachers. Two theories that frame NextGen are bricolage and constructivism. Bricolage provides the umbrella theoretical framework to instill in pre-service teachers the methods and strategies to provide instruction to ALL learners, including students with disabilities, limited English proficient students, students with low literary, and gifted and talented students. Advances in cognitive psychology that focus on learning that is *constructed* by the student through meaningful experiences, in turn, provides the framework for considering how to create learning environments that promote discovery, exploration, and critical thinking, placing students at the center of instruction.

²⁹ *Common Core State Standards Initiative*

Teaching involves possessing and applying a series of skills and knowledge on a daily basis. These skills include content specific knowledge, pedagogical content knowledge, and an assortment of other types of highly specialized knowledge (Ball et.al). In order to be a highly effective teacher, one must be able to understand pedagogy, content, and curriculum. It is imperative that teachers understand their craft and be equipped with the tools needed to reach all their students, including varied abilities, emotional and social maturity, and other factors that influence learning.³⁰ In this sense, teachers are bricoleurs, craftspeople with a set of tools (skills) to use given different situations and learners.³¹ They must also develop the expertise needed to make ‘in the moment’ decisions.

Seeing teachers as bricoleurs, UTEP, through NextGen, seeks to prepare prospective general education teachers to meet the needs of their learners by equipping them with the strategies and skills most widely accepted in order to create a positive impact on student learning and achievement. Thus, central to the design of UTEP is the empowerment of its pre-service teachers with insightful, practical, and comprehensive materials for its diverse secondary students (grades 6-12). NextGen provides the impetus for building a repertoire of specific, concrete and actionable techniques, while providing literacy instruction at the core of its curriculum, based on career and college ready academic standards.

How students learn and how teachers effectively teach are the underpinning questions that will guide UTEP’s curriculum. By using a constructivist teaching approach to the curriculum redesign we can help learners to internalize and reshape new information.³² A

³⁰ Tomlinson 2001, 7

³¹ Hatton 1988

³² Brooks and Brooks 1999, 15

constructivist framework challenges teachers to create environments in which they and their students are encouraged to think and explore. As we place student learning and achievement at the core, we need to train pre-service teachers to adapt curriculum and methods to address students' suppositions.³³ Pre-service teachers need to be taught how to help students build their own bridges linking content knowledge to new ways of knowing and understanding.

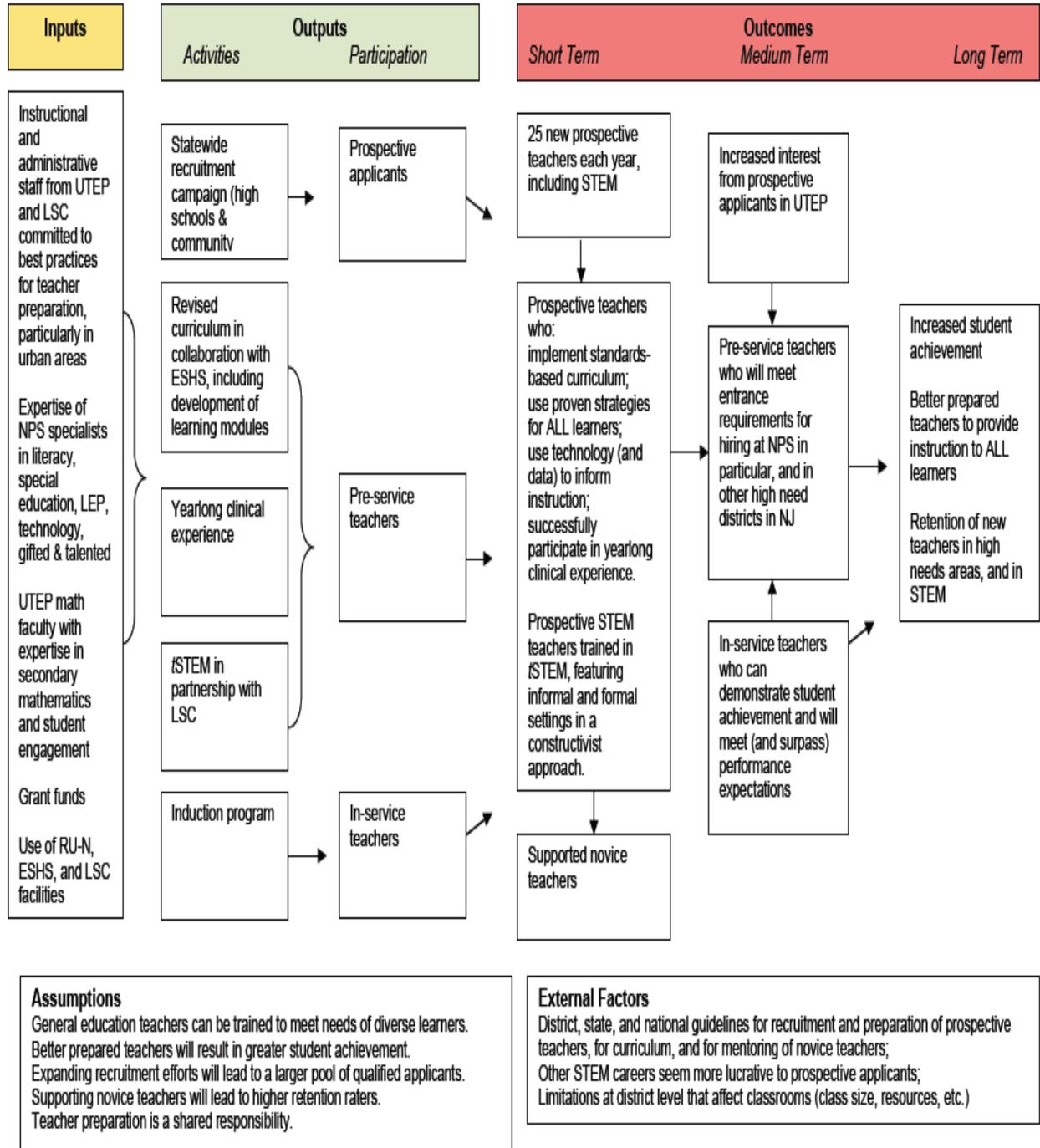
Next Gen's Logic Model

To assist with the program design, the NextGen team created the following logic model.

³³ Brooks and Brooks 1999, 69, 72

NextGen Logic Model

Situation: Pre-service general education teachers need to be better prepared to teach a diverse range of learners, particularly in high need districts. There is a shortage of teachers in STEM areas.



(1) Revising UTEP's curriculum

To accomplish NextGen's goals and objectives (see pages 3-4), UTEP will revise its curriculum to include: (a) developing guiding and measurable outcomes for each cluster of courses; (b) correlating curriculum with internationally benchmarked and college- and career-ready standards; (c) providing training for diagnosing and implementing effective instruction for diverse secondary learners; (d) designing the *t*STEM curriculum; and (e) training to use technology effectively. UTEP's curriculum will place literacy, including purposeful reading, writing, speaking, and listening, at the core of curriculum.³⁴ The new curriculum will be based upon national, state, and district academic and professional standards for teachers.

Again, asking how students learn and how teachers effectively teach will guide the curricular design.³⁵ Both of these critical questions require that pre-service teachers understand the curriculum, know the academic standards (from the state, district, and national organizations) and their core subject content area, and understand how to know their learners. Placing the learner at the center of instruction, UTEP's revised curriculum will implement proven literacy strategies to reach all learners, and help pre-service teachers know how to assess their teaching as well as student progress. Borrowing from the medical profession, the quotations below encapsulates the curriculum design:

Physicians cannot cure an ailment if they do not know how various organs and tissues work. In the same way, a teacher could not solve a learning or motivation problem without knowledge of how the mind works. Presenting an instructional method to a teacher without giving him or her knowledge of the mind is like presenting a drug therapy to a physician without explaining how the drug operates with the body. The

³⁴ Schmoker 2011

³⁵ Schmoker 2011, 21

more mysterious a therapy or instructional program is (e.g., “It works, but I don’t know why”), the more likely it is to be used ineffectively or inappropriately.³⁶

UTEP will use a competency-based model of design to ensure that pre-service teachers have a firm grasp of essential skills sets.³⁷ These competencies will be explicitly stated.

Courses composed of instructional modules designed to help pre-service teachers meet specific objectives, a mastery-learning approach to instruction, and a heavy emphasis on field-based learning will ensure that pre-service teachers acquire these competencies. UTEP’s principles of teaching (SUPER6) and Cluster III courses are already rooted in national and state professional standards for teachers and academic standards for K-12 populations.³⁸ As UTEP re-designs its curriculum under NextGen, the use of national and state models will be central in the development.

Cluster I courses will be foundational tool building, Cluster II courses will advance the use of technology and assessment to inform and improve teaching practices for the needs of the diverse student populations, and Cluster III courses will increase content pedagogical knowledge for each of the disciplines and create a new track of STEM educators and close tie to standards. Cluster IV courses will be a yearlong internship. (Cluster IV will be discussed in another section.) Table 4 represents the overall redesign of UTEP’s curriculum.

³⁶ Howey and Zimpher, 1989

³⁷ Nemser-Feiman 2001 and Boy Scout of America Wilderness First Aid Curriculum and Doctrine Guidelines 2009

³⁸ The following national and state models for professional and academic standards are the basis for UTEP’s SUPER6 and Cluster III courses: INTASC, NJPST and CCSS

Table 4: Changes in UTEP

Cluster	Current Design	Proposed Change in Design
Cluster I: Educational Foundations Courses	Foundations of education in the United States, the development of the adolescent, and urban environments.	Foundational tool building covering essential topics.
Cluster II: Developmental Courses	Instructional technology and evaluation.	Advance the use of technology and assessment to inform and advance practice for the needs of diverse learners.
Cluster III: Curriculum and Pedagogy	Curriculum design and content knowledge with pedagogical practices.	Increase content pedagogical knowledge for each of the disciplines and create a new track of STEM educators and closer tie to standards.
Cluster IV: Clinical Courses	Field experiences in secondary classroom settings in Newark, NJ, including student teaching.	Yearlong internship September through May with “residency”.

UTEP will begin the redesign with two of its Cluster I courses: *Adolescent Psychology and the Urban Experience* (21:300:295) and *21st Century Urban Educator* (21:300:298). Like in many universities, UTEPs courses are taught in 15-week sessions each fall and spring semester. As part the course revision, these two courses will be divided into sub-sections to clearly delineate the topics identified below to improve learning and teaching for student diversity, learning, and achievement. Using the Chicago Public Schools model of induction for new teachers, prospective teachers will build and be able to execute strategies to provide instruction based on the following topics: literacy, accommodations and modifications, community and culture, data-driven instruction, differentiated instruction, classroom management and organization, and creating individual growth plans.³⁹ The above-mentioned topics are central features of teaching and set the stage for learning to teach. These topics will be revisited in both the yearlong clinical experience and the induction program. Below is a brief overview of each topic to be introduced and explored in Cluster I courses.

³⁹ Chicago Induction Program

These topics ensure that prospective teachers understand their diverse learners, which includes students from various socioeconomic, racial, ethnic and religious backgrounds, students with disabilities, students with limited English proficiency, and students with low-literacy as well as gifted and talented students. Cluster I courses will focus on the prospective teachers demonstrating early skills sets of Bloom's taxonomy as it applies to gained knowledge on these topics.⁴⁰ As they advance through the program, the prospective teachers will continue to build comprehension of these topics, and synthesize and evaluate their own application of these topics by Cluster IV.

⁴⁰ Bloom et al. 1956

Table 5: Topics of Study for Cluster I Courses

Topic of Study	Defining Characteristics
Authentic Literacy	Pre-service teachers will learn how to select and apply appropriate reading strategies for all types of learners from low literacy to advanced readers. They will learn how to diagnose reading abilities, use formative and summative assessments to improve student achievement.
Accommodations and Modifications	Pre-service teachers will learn how to select and apply appropriate accommodations and modifications for different abilities of their secondary student populations, including students with special needs, students with limited English proficiency, students with low reading abilities, and students who are gifted and talented. It will examine legal necessity of accommodations and modifications and how to participate on child study team.
Community and Culture	Students from Newark Public Schools bring extensive range of backgrounds, beliefs and experiences to school. Pre-service teachers will acquire knowledge and skills to become culturally responsive in their teaching practices, as well as gain insight into both their student and parent populations.
Data-Driven Instruction	Pre-service teachers will assess, analyze, and plan using formative and summative assessment tools. They will be trained to use data from the assessments to carefully examine and align results with specific learning needs.
Differentiated instruction	It is vital for pre-service teachers to learn how to meet a variety of educational and emotional needs within the classroom. Pre-service teachers will learn how to build a differentiated classroom by creating authentic assignments and assessments, curriculum compacting and adjusting assignments. They will learn instructional strategies to address various learning styles and multiple intelligences. Pre-service teachers will learn to develop learning centers for their classroom.
Integrating local and state policies and procedures into practice	Pre-service teachers will understand their various roles on the national, state, district and school levels. They will become aware of important policies and procedures regarding employment, teacher evaluations, and student growth objectives. They will be trained on using AchieveNJ.com
Classroom Management & Organization	Pre-service teachers will gain knowledge of tools and strategies to enhance classroom management skills to increase the quality of instruction. Topics will include creating a learning environment, engaging students, instruction and working with preventions and interventions. In-class activities, hands-on and action assignment will be used as models for each of the content areas. They will learn effective management techniques for working with students especially when confronted with challenging behaviors, including ways to identify causes of disruptive behaviors and determine positive interventions.
Individual Growth Plan	Pre-service teachers will develop a professional goal plan aligned to InTASC and NJPST. They will develop a professional e-portfolio that documents their professional learning that supports their goals and analysis and reflection of progress made in achieving the goals.

Experts from the various disciplines will be hired to teach each subsection. This ensures that prospective teachers will have a firm base of the respective disciplines as well as in using an interdisciplinary approach and research-based strategies. Specific SMART assignments for each topic will be developed to demonstrate understanding of these topics. Additionally, virtual modules of each of the topics will be created to ensure continuation of training of future UTEP students and to provide professional learning for teachers in NPS during the first year and beyond.

The Cluster II courses, *Information and Communication Technology for Secondary Schools* (21:300:410) (ICT) and *Understanding Educational Evaluation* (21:300:390) will be revised to reflect the objectives of NextGen. ICT integrates technology communication into instruction and evaluation. Particular attention is paid to access and academic uses of ICT in under-resourced urban schools. Prospective teachers plan lessons that incorporate ICT to assist diverse student populations develop subject matter. Additionally, they examine how ICT tools can assist in their PIERS (Plan, Implement, Evaluate, Reflect and Share) strategies, and they begin to create their own portfolios. Through ICT, prospective teachers will particularly learn and apply the technology available in the district. They will use Chrome books, which ESHS has begun to integrate and disseminate to its student population, starting in ICT and continuing in the remaining courses.

In *Understanding Educational Evaluation*, prospective teachers will develop student growth objectives. With LSC, UTEP will develop an assessment tool that measures student growth, measuring both teaching and learning with a focus on growth rather than levels of absolute achievement. Across the initiative's five year term, LSC staff members will work in partnership with UTEP, and ESHS staff members to develop an assessment tool that measures

student growth. The assessment tool will measure both teaching and learning with a focus on growth rather than levels of absolute achievement. The model will utilize student related factors, such as prior test scores, those of individual students as well as those of other students in the class to measure growth and performance.

In Cluster III courses, prospective teachers are introduced to curriculum design, yearlong curriculum mapping, and long- and short-term planning based on local, state, and national guidance documents. These topics will be continued and enhanced, examining both vertical and horizontal planning for their specific content areas. To ensure guided practice in a research-based program, *Curriculum and Instruction* (21:300:388) and *Methods of Teaching* (21:300:386) will incorporate the Research for Better Teaching (RBT) framework.⁴¹ The RBT framework builds practical knowledge on how to teach for a content specific subject and how to adjust to the needs of diverse students.⁴² RBT builds “skillful teachers who are clear about what is to be learned, clear about what achievement means and clear about what they are going to do to help students attain it.”⁴³ This ensures that prospective teachers continue to build on their knowledge of the essential topics of study introduced in Cluster I. It is important to note the NPS has adopted the Skillful Teacher and RBT as part of the professional learning for the district. Thus, by helping prospective teachers to understand the strengths and limitations in this framework, UTEP continues to build a continuum of teaching.

Another key revision to UTEP’s curriculum will be the preparation of prospective STEM teachers in a unique type of training. In partnership with Liberty Science Center (LSC),

⁴¹ Saphier: Research for Better Teaching

⁴² Saphier and Gower 1997, 6

⁴³ Saphier and Gower 1997, 2

NextGen will develop and deliver an innovation initiative utilizing the benefits of formal and informal STEM education methods to effectively train prospective teachers in curriculum design, topical frameworks for the Next Generation Science Standards (NGSS), and delivery/presentation techniques for translating STEM content to a young audience in an engaging/developmentally appropriate manner. At the core of the approach is a constructivist paradigm requiring pre-service teachers to become facilitators, rather than ‘tellers’ of science.

LSC staff members will facilitate STEM training as part of Cluster III courses. Training sessions will focus on the topical frameworks of NGSS, and "unpack" the concepts behind the disciplinary core ideas in the NGSS framework. The sessions will provide significant instruction in curriculum, methods, and instruction training and serve to fortify understanding of the key ideas and foundational concepts embodied in the curricula taught in the important first years in the classroom. LSC will focus on building the confidence of pre-service teachers in their own understanding, training, and support for translating science into a language that is meaningful to learners, and presenting STEM content in engaging, developmentally appropriate ways. LSC will utilize classroom spaces at RU-N to present a series of problem based lab experiences to model a range of teaching methodologies, reflective practice, STEM-specific teacher competencies, "tactical" STEM teaching practice, and integration of the tools, techniques and resources of informal science education with the aim of fortifying the preparation of teachers and, thus, student engagement.

(2) Implementing an effective recruitment and enrollment campaign

Attracting prospective teachers that meet the selection criteria is a must for UTEP as it seeks to expand its reach in the pipeline of prospective teachers. UTEP will focus recruitment on the two main pathways that provide RU-N with students: high schools and community colleges.

NextGen will enable UTEP to attract the most promising applicants from the pool of talent in the two pipelines to ensure that at least 25 candidates are admitted into UTEP per year. UTEP will conduct an intensive recruitment program, pinpointing highly qualified individuals to participate in the pre-baccalaureate program, with an emphasis on underrepresented populations.

UTEP will actively recruit highly qualified applicants through a comprehensive marketing plan that focuses on presenting teaching as a desirable profession among all others.⁴⁴ A combination of printed materials, online websites, social media, in-person communications, and local venues will be utilized to reach as large a pool of potential applicants as possible. Printed materials will be available at all the high schools and distributed through various outlets in the community, as well as mass-mailed.

UTEP will brand and market pre-service training program and work collaboratively to recruit and enroll students, locally and statewide. As part of the recruitment campaign, UTEP will work closely with RU-N's Office of Admissions and Vice-Chancellor for Enrollment. In the past year, UTEP has begun conversations with both entities to discuss recruitment and marketing strategies. Through NextGen, UTEP will additionally work with the Office of University Communications and Marketing and an agency to create a brand, logo, and marketing (print and digital) campaign for Building the Next Generation of Teachers.

LSC and ESHS will assist UTEP with recruitment efforts. Specifically, LSC, UTEP and ESHS will host two recruitment events onsite at LSC. One event will focus on providing high school students with information on STEM education and STEM career pathways. The second event will focus on providing information on NextGen and *t*STEM and encouraging community college students to continue their education via the program.

⁴⁴ Guarino et al 2006, 175

As part of its statewide recruitment efforts, UTEP will host informational sessions for guidance counselors from NJ high schools and for advisors from the state's community colleges. In these sessions, UTEP staff will inform participants of the program, discuss selection criteria and admissions procedures for UTEP and RU-N, highlight key components of NextGen, distribute materials, and encourage counselors/advisors to have their students consider UTEP as a path to NJ teacher certification.

Additionally, UTEP will adopt the following strategies: work with the Office of Financial Aid to make prospective and current students who may qualify aware of the TEACH grant; collaborate with the East Side High School Future Teachers of America Club; offer more guidance in completing the UTEP application including video and webinars as applicable; recruit alumni to be involved in various stages of the recruitment and marketing activities.

(3) Revising the Clinical Experiences

NextGen will create a yearlong clinical experience that begins in the fall semester, continues with targeted activities through the winter session, and ends in the spring semester. Currently, pre-service teachers register for *Clinical I* and for *Clinical II* in either fall or spring, as they are ready. This will no longer be an option, as *Clinical I: Practicum* and *Clinical II: Student Teaching* courses will only be offered in the fall and spring respectively. This key change reflects best practices in the field⁴⁵ and is essential to building the yearlong model of practice that begins with learning how to set up your classroom at the beginning of the school year and how to build out the year. Prospective teachers in the program will start the academic year (fall semester) in *Clinical I: Practicum Experience* (21:300:419). They will learn how to

⁴⁵Sanchez 2010

establish classroom rites and rituals, diagnose the type of learners present in their class, and create a classroom environment report, applying the topics introduced in Cluster I (see Table 5).

During the winter session of the pre-service clinical experience, prospective teachers in all disciplines will participate in a two-week residency, spending one week at LSC. They will reflect on the lessons learned in *Clinical I*, become immersed in building inquiry-based lessons, and prepare for Student Teaching. During this residency, pre-service teachers' work will evolve into developing unique STEM teaching "signatures" focused on building and broadening their repertoire of STEM teaching strategies and electively specializing in one of three tracks: track 1 - Virtual Learning Environments/Cyber-enabled Learning, track 2 - Data Intensive teaching and learning (probes, pre-engineering design, building learning communities), and track 3 - Arts Integration. Teacher candidates will design curriculum linked to each of their selected tracks. Each track will include a digital portfolio of lesson design elements, sample lesson constructs, and assessment media intended to support success of pre-service teachers.

The residency will utilize LSC's unique onsite resources at its Jennifer A. Chalsty Center (JCC) to engage teacher candidates in meaningful informal STEM learning and teaching methodologies. And the residency will be highlighted via LSC's social media mechanisms (facebook, blog, twitter, etc.). JCC features six science and investigation labs, each equipped to teach specific STEM subject areas or serve targeted student audiences. The Teacher Learning Lab, where educators gather ideas and develop teaching plans, is also in this space.

The primary objective of Student Teaching is to provide pre-service teachers with the opportunity for acquisition and demonstration of instructional competence by assuming a significant portion of the cooperating teacher's teaching load. The main goal is to develop and implement well-planned lessons as well as to reflect and refine lessons. By setting up the

yearlong clinical experience, prospective teachers will be able to remain with one cooperating teacher for the duration of the year, get to know their learners, target instructional methods for their learners, and implement their lessons accordingly, thus enriching the Student Teaching experience.

LSC will continue to work with prospective teachers in the *t*STEM track during their student teaching. An LSC staff member will work with each pre-service teacher once a week for a full day providing professional development via in class coaching as part of their clinical coursework. This aspect of the training will focus on essential elements of a science project as framed by the cycle of Inquiry defined by the Education Development Center, NGSS, and the Big Ideas of Science supported by Essential Questions. Focusing on these ideas, pre-service teachers will develop strategies for implementing science projects that span weeks, months, or the entire school year. To promote this approach, pre-service teachers, LSC and UTEP will use concept mapping to guide project development and “work from first principles” in defining the essential elements of what makes a robust science activity.

Along with the changes in the timeline of the clinical experiences, UTEP will offer a more comprehensive orientation to the cooperating teachers and other evaluators. (Each pre-service teacher has three evaluators.) The orientation will be held prior to the start of the school year. Extending the orientation and holding it earlier will ensure that: cooperating teachers do not have conflicting afterschool schedules; the content of the orientation is not rushed, more meaningful conversations about the evaluation tools take place; and clinical students and cooperating teachers can have a supportive space to meet and bond prior to meeting in the classroom. Based on UTEP’s needs assessment, this would be a much-needed and welcomed change.

(4) Implementing an induction program

Like all professions, the first three to five years a novice teacher is honing in on his/her skillsets.⁴⁶ In fact, new teachers are charged with doing two jobs—“carrying out the job they have been hired to do and learning to do that job.”⁴⁷ Since the teaching profession has a high attrition rate, especially in high-needs areas,⁴⁸ NextGen’s induction program will provide a vehicle that orients new teachers to the profession, supports them in their first two years, and assists them with planning, assessment, and classroom organization.⁴⁹ This induction program will include mentor and mentee preparation, facilitate frequent meeting times both face-to-face and virtually, and use the evaluations and observations for purposes of support.

During the first year of NextGen, the planning team will delineate all the roles and responsibilities for the in-service teachers (mentees) and their respective content area mentors. An Induction Coordinator will be hired to organize the two-year curriculum, taking into account the Phases of First-Year Teaching: Anticipation, Survival, Disillusionment, Rejuvenation, and Reflection.⁵⁰ An orientation and weekly activities will be planned. District-wide events will be planned to serve as support and network forums for novice teachers. NextGen will take into account the need to build emotional support by offsetting isolation and providing continual and effective feedback.⁵¹ As mentioned, a portal will be created to include information on useful and

⁴⁶ Headden 2014

⁴⁷ Nemser- Feiman et al. 1992, 2

⁴⁸ National Evaluation Systems: Teacher recruitment and Retention, 2006, 13

⁴⁹ National Evaluation Systems: Teacher recruitment and Retention, 2006, 16

⁵⁰ Headden 2014, 23

⁵¹ Headden 2014, 5

effective instruction practices. Mentees will create a professional plan and portfolio. NextGen will explore the creation of a hotline for novice teachers to provide on-going support through the collaboration of experts in the field.

With ESHS, UTEP will establish a Professional Learning Community for induction following both state⁵² and district guidelines.⁵³ This induction program will be developed for UTEP's graduates as well as ESHS's first year teachers coming into the profession through other pathways. The PLC will establish a two-year mentorship model both on-site and in virtual spaces. The virtual component of the induction program will be available to UTEP graduates who are also employed out-of-the district and out-of-state.

This PLC will concentrate on mentoring and coaching first and second year novice teachers as well as to provide instructional and emotional support. It will create an induction curriculum to strengthen new teachers' content knowledge, pedagogical content knowledge, and using assessments to inform their practice. Additionally, it will continue to build on the topics of literacy, accommodations and modifications, community and culture, data-driven instruction, differentiated instruction, classroom management & organization, and creating individual growth plans. These topics will be introduced in Cluster I and re-visited as pre-service teachers move along the program in their preparation. (See Table 5.)

LSC will provide UTEP's tSTEM graduates access to their professional network, *Teacher Connections*, which allows participants to participate in ongoing professional development workshops. *Teacher Connections* brings teachers, scientists, researchers, and experts in various scientific fields together to enhance teacher's science backgrounds, develop

⁵² NJ DOE Mentoring for Quality Induction Toolkit

⁵³ Newark Public Schools Mentoring Handbook 2014

techniques and activities to enrich student's classroom science experiences, and build resources for use in the classroom. While gaining additional hours of professional development for each program attended, teachers also gain knowledge of the recent developments in science education from collaboration with scientists and researchers in their field. This program is delivered via monthly 45-minute workshops at LSC's facility.

MANAGEMENT PLAN

NextGen's management plan outlines how it will achieve the objectives of the proposed project, including clearly defined responsibilities, timelines, and milestones for successfully accomplishing all the tasks related to the project on time and within budget. UTEP has assembled a team comprised of individuals in key roles in each partner institution to assess the needs, develop the project design, and see the project through. The team and partners share a common belief that has become the foundation of NextGen—the training of pre-service teachers is a shared responsibility. Moreover, NextGen seeks to provide the connective tissue to link teacher preparation from recruitment to preparation and through induction.⁵⁴

The NextGen planning team has identified four main objectives and outlined a plan for meeting them. UTEP will refine its curriculum to include: (a) developing guiding and measurable outcomes; (b) correlating curriculum with internationally benchmarked and college- and career-ready standards; (c) providing training for effectively diagnosing and instructing diverse learners; (d) designing the *i*STEM curriculum; and (e) training to use technology effectively. UTEP's curriculum will place literacy at its core and train prospective teachers in

⁵⁴ Nemser-Feiman 2001, 1049

proven strategies. In order to broaden the applicant pool, UTEP will develop and implement a new recruitment campaign aimed at high schools and two-year community colleges in the state. Prospective teachers will participate in a newly designed yearlong clinical experience that will better prepare them to apply the strategies learned in providing instruction to their learners. After they graduate, in-service teachers will participate in an induction program that will include a professional learning community. See Table 6 below for timeline and key milestones and Table 7 for outline of activities.

Table 6: Timeline and Milestones of Key Activities

Year 1: September 2014 – June 2015	Year 2: July 2015 – June 2016	Year 3: July 2016 – June 2017	Year 4: July 2017 – June 2018	Year 5: July 2018 – June 2019
<ul style="list-style-type: none"> ● Revise curriculum ● Develop and implement recruitment campaign ● Develop yearlong clinical experience ● Plan for mentoring program 	<ul style="list-style-type: none"> ● Admit first cohort ● Implement new curriculum ● Develop modules for training in strategies for special needs, literacy, limited English proficiency, gifted and talented ● Evaluate first year's outcomes 	<ul style="list-style-type: none"> ● Admit second cohort ● Implement new yearlong clinical experience ● Evaluate first cohort's outcomes ● Finalize induction program 	<ul style="list-style-type: none"> ● Admit third cohort ● Implement new induction program ● Evaluate first year of induction program 	<ul style="list-style-type: none"> ● Admit fourth cohort ● Evaluate all outcomes
<p><u>Milestones:</u> Launching recruitment campaign</p>	<p><u>Milestones:</u> September 2015: Welcoming first cohort under NextGen September 2015 - May 2016: Implementing revised yearlong clinical experience</p>	<p><u>Milestones:</u> January 2016: Implementing new tSTEM weeklong training for clinical students May 2017: Graduating first cohort under NextGen</p>	<p><u>Milestones:</u> Summer 2017: Launching new training modules</p>	

Table 7: Outline of NextGen’s Activities Based on First Cohort

Strategies	Activities	Partners	Timeframe
Objective 1. Revise UTEP’s curriculum			
Develop guiding and measurable outcomes for each cluster of courses	Develop clearly defined objectives for each course	UTEP	Year 1
	Develop SMART assignments for each course	UTEP	Year 1
	Implement SMART assignments	UTEP	Year 2 and ongoing
	Evaluate and revise, as necessary, SMART assignments	UTEP	Year 2 and ongoing
Correlate curriculum with internationally benchmarked college- and career-ready standards	Revise syllabi to ensure meeting Common Core Standards, NJ Core Curriculum Content Standards, and specific content area standards	UTEP, LSC	Year 1
Provide training for effectively diagnosing and producing effective instruction	Revise UTEP’s curriculum to include literacy training	UTEP, ESHS	Year 1
	Develop training module to train in literacy strategies	UTEP, ESHS	Year 2
	Revise UTEP’s curriculum to include training for teaching students with special needs	UTEP, ESHS	Year 1
	Develop training module to train in strategies for teaching students with special needs	UTEP, ESHS	Year 2
	Revise UTEP’s curriculum to include training for teaching students with limited English proficiency	UTEP, ESHS	Year 1
	Develop training module to train in strategies for teaching students with limited English proficiency	UTEP, ESHS	Year 2
	Revise UTEP’s curriculum to include training for teaching gifted & talented	UTEP, ESHS	Year 1
	Develop training module to train in strategies for teaching gifted & talented	UTEP, ESHS	Year 2
	Revise UTEP’s curriculum to include culturally responsive pedagogy	UTEP	Year 1
Design <i>t</i> STEM curriculum integrating informal and formal settings	Develop curriculum to be implemented in Cluster III courses	LSC, UTEP	Year 1
	Implement <i>t</i> STEM curriculum	LSC, UTEP	Year 2 and ongoing
	Design training for clinical students	LSC, UTEP	Year 1
	Implement training for clinical students	LSC, UTEP	Year 3 (pilot Year 2)
	Evaluate and revise, as necessary, clinical training	LSC, UTEP	Year 2 (pilot) and ongoing

Objective 2. Implement effective recruitment and enrollment campaign			
Develop and implement recruitment campaign to target NJ high schools, and northern NJ high schools in particular	Revise UTEP's application process	UTEP	Year 1
	Develop marketing materials	UTEP	Year 1
	Disseminate UTEP's marketing materials to all NJ high schools	UTEP	Year 1 and ongoing
	Coordinate with RU-N's Office of Admissions	UTEP	Year 1 and ongoing
	Conduct workshops for guidance counselors	UTEP	Year 1 and ongoing
Develop and implement a recruitment campaign aimed at 2-year community colleges	Develop marketing materials	UTEP	Year 1
	Disseminate UTEP's marketing materials to all NJ community colleges	UTEP	Year 1 and ongoing
	Coordinate with RU-N's Office of Admissions	UTEP	Year 1 and ongoing
	Conduct workshops for advisors at community colleges	UTEP	Year 1 and ongoing
Objective 3. Revise the Clinical Experiences			
Develop and implement a yearlong clinical experience	Hire Assistant Director for Field Experiences	UTEP	Year 1
	Revise Clinical Experiences to become a yearlong experience, with Practicum held in fall semester and Student Teaching in the spring semester	UTEP, ESHS, NPS	Year 1
	Re-design Clinical Orientation	UTEP, ESHS, NPS	Year 2 (pilot), Year 3
	Revise formative and summative evaluations	UTEP	Year 1
	Implement yearlong clinical experience	UTEP, ESHS	Year 2 (pilot), Year 3
	Evaluate revised clinical experience	UTEP, ESHS	Year 2 (pilot) and ongoing
Objective 4. Implement an Induction Program			
Develop and establish an induction program based at East Side High School	Design induction program	UTEP, ESHS, LSC, NPS	Year 1, Year 2, Year 3
	Hire Induction Coordinator	UTEP	Year 3
	Implement induction program	UTEP, ESHS, NPS	Year 4 and ongoing
	Evaluate induction program	UTEP, ESHS, NPS	Year 4 and ongoing

NextGen Management Team and Key Positions

Under the leadership of Dr. Joelle Tutela, a management team will oversee and be responsible for the implementation of the proposed project. The team consists of members of UTEP, ESHS, and LSC. Their respective responsibilities will be as follows:

- Dr. Joelle Tutela, Director of Teacher Education, UTEP

Will be responsible for the supervision and implementation of the project; will plan and coordinate the activities of NextGen; will report to the federal grant officer; will be in charge of financial matters; will convene all partners; will be responsible for ongoing assessments.

- (To be hired), Evaluator

Will be responsible for planning, coordinating, and carrying out the evaluation of the project.

- (To be hired), Assistant Director for Field Experiences, UTEP

Will be responsible for planning and coordinating all the field experiences; will assist with the ongoing assessment of the activities associated with the project.

- Ivette Rosario, Program Coordinator, UTEP

Will coordinate the recruitment strategy and activities; will assist with data collection for evaluation; will assist Director with activities related to NextGen.

- (To be hired), Induction Coordinator, UTEP

Will coordinate the delivery of the induction program, including working with the mentors.

- Dr. Mario Santos, Principal, East Side High School, Newark Public Schools

Will provide support to the program from the school district's perspective; will assign key staff.

- Daniel Menelly, Vice President of STEM Education, Liberty Science Center

Will be responsible for overall management of the project for Liberty Science Center.

Team of Experts and Mentors

In addition to the management team, a team of experts for the curriculum revision and module development, and mentors will be assembled. Experts and mentors will be required to have had extensive experience in schools and in their content area. Experts will work with UTEP faculty to revise courses and will assist with teaching as needed. They will also guide the creation of the modules. The mentors will guide in-service teachers during the first two years of teaching, following the guidelines of the New Jersey Department of Education and of Newark Public Schools.

Bios of NextGen Team Members

UTEP:

Joelle J. Tutela, Ph.D., is the Director of the Rutgers University-Newark's Urban Teacher Education Program. She has been an educator since 1994. From the front-lines of teaching social studies at a SURR public high school in Manhattan in the 1990s to designing, lobbying for, and implementing a small learning community, The Center for Social Justice at Montclair High School (Montclair, NJ), her breadth of expertise spans a wide range of disciplines. In addition, she has consulted for numerous high schools-magnet, single-gender, comprehensive, and early college-in Brooklyn, Bronx, Harlem, and Queens and for educational agencies in Manhattan, she developed and executed creative strategies that aid teachers in developing lessons that engage their racially, ethnically, economically, and linguistically diverse students. The core of professional development of in-service teachers is the use of their students' work to improve lesson and unit planning and curriculum mapping. She holds a Bachelor of Arts in History and Secondary Education from Boston College, a Masters of Arts in Social Studies from Teachers College, a Masters of Arts in Studio Arts from New York University, a

Master of Arts in Philosophy from The Graduate Center of the City University of New York, and a Doctorate of Philosophy in Urban Educator from The Graduate Center of the City University of New York. Additionally, she holds a graduate certificate from Columbia University in Feminist Scholarship.

Arthur B. Powell, Ph.D., teaches, publishes, and conducts research in mathematics education. His books (co-edited and co-authored) are *Math: A Rich Heritage* (1995, Globe Fearon); *Ethnomathematics: Challenging Eurocentrism in Mathematics Education* (1997, SUNY); *A Escrita e o Pensamento Matemático: Interações e Potencialidades [Writing and Mathematical Thinking: Interactions and Potentialities]* (2006, Papirus); *Culturally Responsive Mathematics Education* (2009, Routledge); and *Combinatorics and Reasoning: Representing, Justifying and Building Isomorphisms* (2010, Springer). He is Faculty Research Scientist and Associate Director of the Robert B. Davis Institute for Learning of the Graduate School of Education and directs the Research Group on Communication, Technology, and Mathematics Learning, Rutgers University. He was Co-Chair of the AERA SIG/Research in Mathematics Education and teaches undergraduate and graduate courses in mathematics education, technology, and qualitative research methods.

Roberta Schorr, Ed.D., is an Associate Professor in the Department of Urban Education, an affiliate member of the Department of Mathematics and Computer Science, and a member of the Ph.D. faculty of the Graduate School and Graduate School of Education. Dr. Schorr received her Undergraduate degree in mathematics from Brooklyn College (of the City University of New York), and masters and doctoral degrees in Mathematics Education from Rutgers University. She has authored or co-authored over 80 articles, chapters, and papers, including several commissioned reports (by the Office of the Governor, the NJ Department of Education and the

NJ Chamber of Commerce); as well a book entitled *The Ambiguity of Teaching to the Test*. She has delivered over 100 statewide, national and international talks and presentations about her research, including invited presentations at the National Academy of Sciences, Capitol Hill, the NJ State Assembly, the NJ State Board of Education, the NJ Chamber of Commerce, and Federal Court (where she provided expert testimony in the Microsoft antitrust litigation). She is an expert in math education in urban, low-income, and predominantly minority schools, with research focusing on mathematical cognition and engagement in middle and high school students.

Lina Sanchez-Leal, Ed.D., is a senior research associate in the Department of Urban Education. Dr. Sanchez-Leal earned a B.A. in mathematics from Rutgers University-Newark and doctoral degree in Mathematics Education from Rutgers University Graduate School of Education. Prior to joining the UTEP department, Dr. Sanchez was a high school mathematics teacher at the Barringer Prep High School in Newark NJ. For the past 2 years, Dr. Sanchez Leal has developed and implemented several highly successful afterschool mathematics programs within the Jersey City, NJ, middle schools as part of the US Department of Education's 21st Century Program. She has extended this program to include, Sussex Ave Renew School in Newark NJ. Her research interests involve both the use of technology to improve the teaching and learning of math, and the development of a sound theoretical and practical understanding of student engagement. She also works with teachers and administrators to help them improve instruction through the use of research-based practices in mathematics. Since the Fall of 2010, Dr. Sanchez-Leal has co-taught UTEP's Mathematics Methods, Mathematics Curriculum, Clinical I and Clinical II.

Ivette Rosario is currently UTEP's Program Coordinator. Prior to UTEP, Ms. Rosario worked for the Department of Urban Education's Abbott Leadership Institute in the capacity of

coordinator of the Committee of Advocates for Newark's Children, bringing together numerous stakeholders within the City of Newark to collaborate in the education arena. Ms. Rosario worked in various capacities in two schools, Maria Varisco Charter School in Newark, NJ, and Eximius College Preparatory Academy, in the Bronx, NY, a public middle and high school, which she co-founded. At both schools, Ms. Rosario took on administrative and teaching positions in the area of science. Ms. Rosario began her career in education at the New Jersey Institute of Technology, where she oversaw an outreach program for science and mathematics teachers in Newark. She has also taught in STEM-based summer programs and has served as educational consultant. She holds a B.A. in Mathematics from Rutgers University-Newark.

East Side High School:

Mario Santos, Ed.D., is the Principal of ESHS. He earned his B.A. in Political Science and Communications from Rutgers University in New Brunswick. Dr. Santos obtained a master's degree in Supervision from Saint Peter's College, a master's degree in Bi-lingual/Bi-cultural Education from Kean University, and an Educational Specialist Degree from Seton Hall University in addition to an Ed.D. in Administration and Supervision. He has an extensive career in Newark Public Schools, which includes Bilingual Social Studies teacher at East Side High School, a School Core Team Specialist and Special Assistant to the Assistant Superintendent for Newark Public Schools, Vice-Principal of Wilson Avenue School (in Newark).

Meg Murray is a Vice Principal of Instruction at East Side High School in Newark, NJ. She has been at East Side High School for 13 years, 6 as a full-time English teacher, 6 as an English Department Chair, and now serves as VP of Instruction. She holds a Bachelor of Arts in English from University of Illinois, and a Masters of Arts in English Education from Columbia

University Teachers College. After becoming head of the English Department, Meg worked to transform curriculum, instructional practices, and mindset. As a result of these transformational changes, East Side's English scores on the state test increased from 59% passing in 2005 to 94% passing in 2013.

Liberty Science Center:

Daniel Menelly is the Vice President of STEM Education at Liberty Science Center in Jersey City, NJ. Mr. Menelly will be responsible for overall management of the project for Liberty Science Center. Mr. Menelly managed the expansion of LSC's STEM division, has developed multitier effective programs with district superintendents and enhanced LSC's cyberlearning platform of programs. Mr. Menelly has extensive experience managing multi-year federal, corporate and foundation grants, including a NASA-CAN award for student and educator programs. From 1998 to 2012 Mr. Menelly worked at the United Nations International School in Manhattan, where he developed and taught middle school science through a minds-on, experiential model and integrated science lessons into other academic disciplines. In 2010-11, he took a leave of absence from the UN school to become the Albert Einstein Distinguished Fellow at the National Science Foundation in Arlington, Virginia. There Mr. Menelly tracked, evaluated and promoted STEM education policy and reform initiatives at the national level. Mr. Menelly's areas of specialization include curriculum design and review, cyber-enabled learning, science education media, teacher evaluation and hands-on science. He is a science education advisor at the Science House Foundation. Mr. Menelly received a B.S. in Biology from Fairfield University and a STEM teaching license from Wesleyan University.

Anthony Bisulca is the Associate Director of Teacher Programs at Liberty Science Center in Jersey City, NJ. He leads his department in the planning and implementation of their various

teacher professional development programs. He and his team work with in-service teachers from grades Pre-K – 12, assisting them with implementing progressive methodologies and updating their content knowledge. His background includes several years of science teaching at the middle school and high school level as well as an internship in an NSF grant focused on the impact of cooperative learning in science education. He holds a M.A. in science education from Teachers College, Columbia University.

Other Rutgers University:

Drew Gitomer, Ph.D., is considered one of the nation's premier scholars on teacher assessment and has compiled a stellar record of research on teacher quality, the measurement of effective teaching, and the assessment of learning. He has spent most of his professional life at Educational Testing Service in Princeton, New Jersey. On February 8, 2011, the Rutgers University Board of Governors selected him to be the inaugural holder of the Rose and Nicholas DeMarzo Chair in Education. Dr. Gitomer's outstanding background includes serving as distinguished researcher and director of the Understanding Teaching Quality Center, as well as senior vice president for Research and Development, both at Educational Testing Service in Princeton, NJ. He has written and edited numerous highly regarded publications and currently serves as co-editor of a new edition of the prestigious *Handbook of Research on Teaching*, an essential resource for scholars who study teaching and learning.

Alan Sadovnik, Ph.D., is Board of Governors Distinguished Service Professor of Education, Sociology and Public Administration and Affairs at Rutgers University, Newark, New Jersey, where he is the Co-Director of the Institute on Educational Law and Policy and the Newark Schools Research Collaborative, and Coordinator of the Educational Policy track of the Ph.D. Program in Urban Systems. He is the author of *Equity and Excellence in Higher Education*

(1995); coauthor of *Exploring Education: An Introduction to the Foundations of Education* (1994, 2001, 2006, 2013); editor of *Knowledge and Pedagogy: The Sociology of Basil Bernstein* (1995) and *Sociology of Education: A Critical Reader* (2007, 2010); and coeditor of *Exploring Society* (1987), *International Handbook of Educational Reform* (1992), *Implementing Educational Reform: Sociological Perspectives on Educational Reform* (1995), “Schools of Tomorrow,” *Schools of Today: What Happened to Progressive Education* (1999), *Sociology and Education: An Encyclopedia* (2002), *Founding Mothers and Others: Women Educational Leaders During the Progressive Era* (2002), *No Child Left Behind and the Reduction of the Achievement Gap: Sociological Perspectives on Federal Educational Policy* (2008) and *Toolkits, Translation Devices and Conceptual Accounts: Essays on Basil Bernstein's Sociology of Knowledge* (2010), as well as dozens of journal articles and book chapters and ten major urban educational policy reports on Newark, New Jersey and the nation. He received the American Sociological Association’s Willard Waller Award in 1991 for the outstanding article in the sociology of education; and the American Educational Association Critics Choice Award for outstanding books in 1995 for *Knowledge and Pedagogy*, in 2000 for “Schools of Tomorrow” and in 2002 for *Founding Mothers*.

EVALUATION PLAN

To assess UTEP's progress in achieving NextGen's goals, a model of action and evaluation will be employed. UTEP will collect data from UTEP and NPS, examine the data, and take informed action. Under the guidance of an external evaluator, UTEP will evaluate the extent to which it has met its objectives in the following manner:

Objective 1: Revise UTEP's curriculum to include: (1) developing guiding and measuring outcomes for each cluster of courses; (2) implementing a standards-based curriculum; (3) training for effectively diagnosing and producing effective instruction for diverse secondary students including instruction to students with special needs and students with limited English proficiency; (4) creating *t*STEM curriculum integrating informal and formal settings; and (5) training for effective use of technology.

UTEP will use formative and summative assessments and SMART assignments to measure the competencies of prospective teachers. Qualitative and quantitative data will be used to identify strengths and areas in need of improvement.

Objective 2: Implement an effective recruitment and enrollment campaign

UTEP will measure the effectiveness of its recruitment plan through surveys and questionnaires and by the number of students per year who are admitted to UTEP, with the aim of admitting 25 qualified prospective teachers per year.

Objective 3: Revise the clinical experiences to implement a yearlong pre-service clinical component

UTEP will use formative and summative evaluation tools, rubrics, and surveys to measure the success of prospective teachers with respect to meeting the competencies for pre-service teachers.

Objective 4: Implement a comprehensive induction program to mentor novice teachers during the first two years of teaching

UTEP will devise surveys and interview protocols to investigate how graduates are faring during their initial years, their needs, and the quality of the mentoring system. In addition, UTEP will compare retention rates to other NPS novice teachers from different pathways in order to evaluate the effects of NextGen's induction model on retention.

With respect to Title II Section 204(a), UTEP will evaluate each of the areas listed in the statute using measurable performance measures, including the GPRA indicators:

1. *The achievement for all prospective and new teachers hired by NPS, as measured by the partnership:* UTEP will evaluate the effect of the program on increasing achievement for the prospective and new teachers in the program who are hired in high need districts. UTEP will construct a quasi-experimental design that compares its graduates according to the EPP and compare to state averages. We will examine a variety of demographic, educational and achievement variables in order to determine whether or not there are any initial differences in the two populations upon entry and if there are any differences during their time in the program. Second, we will compare graduates with a matched sample of NPS teachers from a variety of other pathways. For both of these comparisons, we will use a number of outcomes measures to

measure increasing achievement, including scores of the PRAXIS II examinations, overall GPA, GPA in education courses, and GPA in content major. These analyses will enable us to measure the independent effects of NextGen, when controlling for demographic, educational and achievement variables, on the achievement of its graduates as compared to NPS teachers from a variety of different pathways, including traditional university teacher education programs and NJ alternate route programs. It is important to note that controlling for initial differences in achievement and educational backgrounds for teachers from different pathways is essential, as some pathways (i.e. Teach for America) recruit candidates from the most elite colleges and with the highest achievement scores (i.e. SAT; GRE). Therefore, there must be a control for comparisons of pass rates and scaled scores among groups.

2. *Teacher retention in the first three years of the teacher's career:*

UTEP will use the quasi-experimental design above to compare UTEP graduates with new teachers in the NPS. Using the same analyses outlined in (1) above, we will be able to measure the independent effects of UTEP on three year retention rates compared to teachers from other pathways, controlling for demographic, educational and achievement variables. It is important to note that some pathways (i.e. Teach for America) may have lower retention rates as their teachers sign on for only a short-term commitment.

3. *Improvement in the pass rates and scaled scores for the initial state certification and licensure of teachers:*

UTEP will compare the pass rates and scale scores of students in UTEP to a matched sample of new NPS teachers from a variety of pathways. Controlling for demographic, educational and initial achievement variables, we will be able to measure the effects on achievement on state examinations. It is important to note that controlling for initial differences in achievement and

educational backgrounds for teachers from different pathways is essential, as some pathways (i.e. Teach for America) recruit candidates from the most elite colleges and with the highest achievement scores (i.e. SAT; GRE). Therefore, comparisons of pass rates and scaled scores among groups must be controlled for.

4. *The percentage of highly qualified teachers hired by NPS:*

UTEP will compare the percentages of highly qualified teachers in each subject area over the time period of the grant in order to measure how the addition of UTEP graduates affects the highly qualified teacher rate. It is, however, important to note that given the small cohort of UTEP students (25 per year), the effects on the overall percentage in the NPS might be small.

5. *The percentage of highly qualified teachers hired by NPS who are members of underrepresented groups:* UTEP will add the variable of underrepresentation to the analysis in (4) above in order to examine the effect of NextGen on increasing the number of teachers hired who are from underrepresented groups. Again, given the small size of the NextGen cohorts, the effects will be small. However, given the fact that Rutgers University-Newark has been the most diverse university campus 16 years running as determined by US News and World Report and that it attracts a high number of students from underrepresented groups, and that NextGen's catchment area is Newark, it is highly likely that a majority of its graduates will be from such groups.

6. *The percentage of highly qualified teachers hired by NPS teaching high needs subjects:* UTEP will add this variable to the analyses conducted under (4) and (5) above. Once again, UTEP would expect the effect on increasing the number of teachers in high needs subjects to be small given cohort size. However, given UTEP's emphasis on the preparation of STEM teachers, UTEP expects that a significant number of NextGen teachers will be in STEM areas.

7. *The percentage of highly qualified teachers hired by NPS teaching high need areas (special education, LEP):* Given the fact that UTEP does not have a program that prepares students for licensure in special education or LEP, NextGen will not have an effect in these areas.

8. *The percentage of highly qualified teachers hired by NPS teaching in high need schools, disaggregated by elementary and secondary levels:* UTEP will add the variable of high needs schools to the analyses conducted under (4-6) above in order to measure the effects of NextGen on the percentage of highly qualified teachers teaching in high needs schools, disaggregated by elementary and secondary levels.

9. *As applicable, the percentage of highly qualified teachers hired by NPS trained to integrate technology effectively into curricula and instruction, including technology consistent with the principles of universal design for learning:*

UTEP will use its nationally accredited evaluation process to measure the competencies of graduates in using technology consistent with the principles of universal design for learning. SMART assignments and evaluation tools ascertain the proficiency of graduates in integrating technology. In addition, as part of the induction and mentoring process, UTEP will evaluate graduates during the first two years as NPS teachers in order to assess their competencies in this area. While UTEP will be able to measure the abilities of NextGen teachers to use technology, UTEP will not be able to compare its graduates to other new teachers in the NPS, unless the district implements performance evaluations of all teachers in this and other areas.

10. *To use technology to collect, manage, and analyze data to improve teaching and learning for the purpose of improving academic achievement:* UTEP will use its evaluation process to measure the competencies of its graduates in using technology to collect, manage and analyze

data to improve teaching and learning for the purpose of improving academic achievement. The evaluation process has a number of assignments, which are evaluated through rubrics and the outcomes measures of students in student teachers' classes to ascertain the proficiency of graduates in using technology to improve instruction and student achievement. In addition, as part of the induction and mentoring process, UTEP will evaluate its graduate during the first two years as NPS teachers in order to assess their competencies in this area. While we will be able to measure the abilities of NextGen teachers to use technology for improvement, UTEP will not be able to compare its graduates to other new teachers in the NPS, unless the district implements performance evaluations of all teachers in this and other areas.

11. *How we shall collect, analyze and use data on retention of all teachers and early childhood educators in schools and early childhood education programs in Newark to evaluate the effectiveness of the partnership's teacher and educator support system:* Since UTEP does not have an early childhood licensure program, this is not applicable.

In conclusion, the NextGen partnership is honored to have the opportunity to apply for this Teacher Quality Partnership Grant. We look forward to creating a premier teacher preparation program to 1) improve student achievement; 2) strengthen the quality of prospective teachers in general, and STEM in particular; and 3) fulfill a critical need for teachers in high needs areas for urban districts and in STEM.