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A Review Of Teacher Preparation In New York City: Through An Analysis Of The Teacher Academy

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A REVIEW OF TEACHER PREPARATION IN NEW YORK CITY:
THROUGH AN ANALYSIS
OF THE
TEACHER ACADEMY

by

NAOMI UCHECHUWKU NWOSU

A dissertation submitted to the Graduate Faculty in Urban Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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This manuscript has been read and accepted for the Graduate Faculty in Urban Education in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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THE CITY UNIVERSITY OF NEW YORK
Abstract

TEACHER PREPARATION: AN ANALYSIS OF THE CITY UNIVERSITY OF NEW YORK’S TEACHER ACADEMY

by

Naomi Uchecuwku Nwosu

The purpose of this study has been to explore alternative and traditional teacher preparation programs through an analysis of the City University of New York’s Teacher Academy program. This study explored the following three aspects of the Teacher Academy: (1) the planning phase- identifying the goal of the Teacher Academy and how the program was envisioned to change teacher preparation within the City University of New York, (2) the implementation phase- identifying the components of the Teacher Academy that were aligned with either or both alternative and traditional teacher preparation programs, and (3) the discontinuation phase- the decision by program constituents to freeze admissions into the Teacher Academy and the ultimate decision to discontinue overall admissions to the program.

The following five research questions govern this study:

1. How did the profile/characteristics of Teacher Academy candidates differ from traditional and alternate teacher preparation programs?

2. How did the planned features and components of the Teacher Academy differ from and were similar to alternate and traditional teacher preparation programs? How do these
features align with the presented conceptual frameworks of: constructivism, legitimate peripheral participation, and communities of practice?

3. How did the views of the various constituents (Petrie Foundation, CUNY Central, NYU, and DOE Partnership for Teacher Excellence) influence the three phases of the Teacher Academy (planning, implementation and closure phases)?

4. What were some of the ideological perspectives and underlying beliefs regarding the mission and purpose of the CUNY Teacher Academy?

5. How did the Teacher Academy semester-based seminars, fieldwork curriculum guide, and fieldwork experience influence students’ pedagogy, teaching style, disposition and philosophy of education?

The value of this study lies in the lessons learned through the interviews, surveys and program documents of the implementation of teacher-preparation innovations. The success of teacher preparation programs depends on the level of participation and support of all constituents. In addition these programs depend on the creation of a partnership in which the goals of each constituent are aligned and are clearly communicated. The goal of the study is to contribute to the understanding of teacher preparation programs and to suggest the components of both alternative and traditional teacher preparation programs that should be adapted in all teacher preparation programs.
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It’s finally done!!!!
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Chapter 1 - Introduction

The Current State of Education

Within the past five years, several major events have impacted and shaped trends in the current efforts to prepare teachers. A critical change is in the accreditation process and the pending changes in Title II of the Higher Education Act. In 2013, the National Council for the Accreditation of Teacher Preparation (NCATE), a long standing accreditation body founded in 1954, joined the Teacher Education Accreditation Council (TEAC), which broke off from NCATE with a different accreditation philosophy and consisted primarily of small colleges and large research universities who did not want to subject themselves to NCATE’s specific standards. These two accrediting bodies joined in 2012 to form the Council for the Accreditation of Educator Preparation (CAEP) (http://caepnet.org). The newly formed CAEP began the development of a new set of standards, and as of 2014, CAEP adopted three new standards of the assessment of teacher preparation programs that are data driven. After the spring of 2016 all accreditation must follow the CAEP standards. NCATE, CAEPs primary predecessor had a set of standards that focused on candidate knowledge and dispositions, the system for assessment, the quality of field work, attention to diversity, the quality of faculty and the organization and administration of the unit, including resources and leadership. In recent years evidence of the impact of graduates on K-12 student learning was expected. Very few institutions failed NCATE accreditation. In fact, in 2000, when the Regents required accreditation of all programs in New York State, and programs had a choice of NCATE, TEAC, and RATE, all of the 65 programs choosing NCATE were accredited. TEAC began with minimum standards and instead asked an institution to develop a “brief” describing themselves and their programs. The TEAC review examined the inquiry brief and assessed its accuracy. Very few institutions failed the
TEAC process. Also, after protests that NCATE was too expensive in New York (and before TEAC was available) the Regents established the Regents Accreditation of Teacher Education (RATE) which reviewed about a third of the states’ colleges. In thirteen instances the RATE board recommended declining accreditation. In all cases, the Regents overturned the recommendations, and sometimes the Commissioner’s recommendations when he concurred, and accredited all institutions with some minor programmatic exceptions. CAEP then came on the scene with very high standards focused on the impact of college graduates who become teachers on the standardized test scores of their students in K-12 settings. CAEP’s standards focus on data and do not include a standard on diversity, on faculty, or on resources. CAEP does include a standard requiring the following as part of Standard 3.

Therefore, the goals of accreditation groups and program evaluators have shifted in accordance with the present modifications in teacher preparation. As of 2013, CAEP has modified their Standards for Accreditation of Educator Preparation from five standards to three interim standards: (1) candidates demonstrate knowledge, (2) skills, and (3) professional dispositions for effective work in schools; data driven decisions about candidates and programs; and resources and practices to support candidate learning (http://caepnet.org/).

The new CAEP (2015) data driven standards assure that the teacher preparation median grade point average of its accepted cohort of candidates is a minimum of 3.0. In addition, to the group average performance on nationally scored ability/achievement assessments such as the American College Testing (ACT), Scholastic Aptitude Test (SAT), or Graduate Record Exam (GRE):

- Is in the top 50% from 2017-2018
- Is in the top 40% of the distribution from 2018-2029
- Is in the top 33% percent of the distribution by 2020
These standards are raising the bar for teacher preparation programs and rely on assessment to evaluate teacher preparation programs and the effectiveness of teacher candidates in classrooms.

Needless to say, this has caused concerns among teacher educators, so much so that the major association of deans, the American Association of Colleges for Teacher Education (AACTE) adopted a resolution at its February 2015 meeting. The organization supports CAEP as an accrediting body, but has concerns about its credibility. The AACTE Board expressed their concern and articulated that, “…there is a ‘crisis of confidence’ with respect to CAEP. Specific concerns are related to the accreditation standards, process for accreditation, costs associated with accreditation, the capacity of CAEP to implement the accreditation system and the representativeness of the CAEP governance structure” (http://aacte.org/news-room/press-releases-statements/488-aacte-board-resolution-on-caep)(AACTE Board Resolution, 2015)

At the same time The National Council on Teacher Quality (NCTQ) released the Teacher Prep Review: A Review of the Nation’s Teacher Preparation Programs, in 2013 & 2014. Both annual reports, revealed teacher preparation in the United States as mediocre based on their nineteen evaluation standards and suggested that “far more needs to be done to expand the pool of teachers properly prepared to meet the challenges of the contemporary American classroom” (2014 TeacherPrep_Review). The methodology of NCTQ—the review of available documents from institutions as the basis for judgment—has been challenged, but its claims are very public. One state institution was ranked #3 in the nation one year, #70 the next year, and appealed. NCTQ reported that they had made an error, and it should be #3. Of course the news was already out, adding to the negative public perception of teacher education.

In New York City developments in teacher preparation also included the 2014, implementation of new teacher certification examinations that lead to the certification of
teachers. These incorporated edTPA; Educating All Students (EAS) test and the Academic Literacy Skills Test (ALST). On the state level, in 2015, Governor Cuomo highlighted the following agenda items for reforming education on the state level: professionalize teaching and increase standards; strengthen teacher evaluations; reward excellent teachers with performance pay; transform the state’s failing schools; expeditiously but fairly remove ineffective teachers; and establish the New York Mentoring Commission (h (2015, Opportunity Agenda). These major initiatives and shifts in education have impacted and continue to impact teacher preparation programs and are driving what teacher candidates are expected to know prior to entering the classroom.

New York State became one of several states, which adapted the Common Core Standards, a new K-12 curriculum. Teacher preparation programs in New York City are recreating their curriculum and requirements based on the introduction of new classroom curriculum standards (Common Core State Standards), pressure from the Governor to increase student’s performance on standardized examinations and the implementation of new teacher education certification examination requirements (Academic Literacy Skills Test (ALST), Educating All Students (EAS) and edTPA). Constituents are concerned; educators, parents, teachers, elected officials, school administrators and teacher preparation administrators, are questioning the new curriculum, the implementation of the curriculum and student assessment. In addition, there is a need to review the restructuring of teacher preparation programs to ensure that their programs prepare teacher candidates to pass the new teacher certification examinations and understand the new secondary education curriculum.

The introduction of the Common Core State Standard by forty-four states, including New York State, and the implementation of new teacher certification exams for New York State
teacher certification, as stated earlier, are the forefront topics in regards to teacher preparation and certification. The questions surrounding these conversations are (1) how do we effectively educate and certify prospective teachers? and (2) how do we effectively assess teacher preparation and student outcomes? The current implementation of the Common Core State Standards (CCSS) is leading the growing research on the development of exemplary teacher preparation programs. Calkins, Ehrenworth & Lehman (2012), suggest that the CCSS are significant and represent the most sweeping reform of the K-12 curriculum that has ever occurred in the country. The new standards also emphasize that any educator who intends on playing a role in education, must have a deep understanding of these standards. This understanding must be facilitated in teacher preparation programs to ensure that program graduates are equipped with the knowledge to effectively teach. However, the research on what teacher preparation programs should teach and how classroom teachers affect student performance on standardized examinations is minuscule, and needs to be restructured to incorporate all of the attributes of teaching and student populations, to achieve accurate data. Fuller et al. (2006) suggest, that in order to fully examine teacher outcomes, researchers must begin to analyze outcomes such as placement, retention, and impact on student test scores, which would require states to collect and make available detailed data in a number of areas such as teacher characteristics and prior experiences: namely, teacher production, placement, and retention; the link between test scores and students; the link between students, their teachers, and the preparation programs of the teachers; a wide variety of school characteristics; and the characteristics of the principal. There is much work that needs to be done. Most states do not collect a sufficient amount of this type of data and some that do collect such data either do not know how to use it or simply do not want to use it (Fuller, 2006).
In addition, there must be an evaluation of what teacher preparation programs should be preparing teachers to do, and how their curricula reinforces what program completers should know. This is especially imperative based on the introduction of the new teacher certification examination requirements. The New York State Board of Regents, 2013, suggest that Colleges of Education are responsible for ensuring that their faculty and candidates have support to successfully prepare for the new teacher certification examinations. To provide supplemental support to Schools of Education, funding from Race to the Top was allocated to support faculty professional development. Further, funding for teacher preparation programs to train their staff on the new state curriculum, new teacher preparation examinations and teacher preparation programs will be assessed.

The National Council on Teacher Quality included the additional standard of rigor to its original list of eighteen standards and encompassed an analysis of eighty-five secondary education alternative certification programs across the United States in their 2014 Teacher Prep Review Report. Furthermore, NCTQ defined the following teacher preparation policy priorities for New York: prepare all teachers to meet the instructional shifts of college-and-career-readiness standards for students by strengthening preparation requirements to incorporate texts and complex texts into their classroom instruction to build content knowledge in interdisciplinary content areas; require teacher candidates to pass a content test in every area of acquired licensure; and hold preparation programs accountable (setting goals & standards and assessing them accordingly) (http://www.nctq.org/dmsView/Teacher_Prep_Review_2014_Report). Regardless of how teacher preparation programs are assessed, the ultimate goal is to prepare teachers to enter classrooms and succeed with all students.
History of Teacher Education

In order to understand the current efforts to prepare and assess educators, we must first explore the historical trends in teacher certification and teacher education, as teacher education is deemed one of the oldest programs in liberal arts colleges and universities (Borrowman, 1965). From the production of all male teachers by colleges, academies, and seminaries to the introduction of alternative teacher preparation programs to address teacher shortages across the nation, with such a long standing in academia the education discipline has been reshaped, revitalized, and restructured several times over the course of its existence (Fraser, 2007). Education researcher, A.H. Jones, also suggests that all of education is marginalized, and teacher education particularly so. We must evaluate who we put in charge to prepare teachers for public school classroom (Jones, 2010). Teacher education in the United States involves the evolution of teacher certification that shifted from certification at the local level based on individual interviews and examinations to an increased reliance on professional educational standards and state control of the requirements of teacher preparation programs (Zeichner & Hutchinson, 2008; Grossman & Loeb, 2008; Feistritzer & Haar, 2008).

From the establishment of schooling and educational institutions in the United States to the current state of education in this country, the majority of the population continues to advocate that the primary purpose of education is to prepare the youth for their economic and social lives (Goodlad, Mantle-Bromley, & Goodlad, 2004; Fraser, 2007; Michelli & Keiser, 2005). Some teacher educators support this view and claim that it is exemplary classroom instruction that generally equips students with the knowledge and intellectual skills to confront the challenges and responsibilities of adulthood (Hansen, 2008). The 1957 launching of the Russian satellite Sputnik highlighted the inferiority of the American educational system and shifted curriculum by
placing the state of math and science education in the United States as an immediate national concern. Today, the United States’ ranking on national assessments is driving the nation to focus heavily on the preparation of STEM teachers and the evaluation of their preparation.

Many citizens are aware that the nation has historically failed to provide a curriculum that prepares students to compete academically with other nations, despite the fact that our students are becoming cultural consumers who are interacting with their worldwide peers. While colleges and institutions have implemented numerous traditional teacher education programs to train an extended number of teachers. These programs have not been capable of creating a sufficient number of teachers to align with the growing number of classroom teacher vacancies, and were extremely inefficient in certifying much needed math and science educators. The 1983 report *A Nation at Risk* (The National Commission on Excellence in Education, 1983) highlighted the idea that in order for the United States to compete in the world of technology and research, our future depends upon mathematics and science teachers who inspire students to pursue a range of advanced careers in education, medicine, research, and industry (Feistritzer & Haar, 2008). Advocates of the *A Nation at Risk* report, also support the notion that exemplary mathematics and science teachers are equipped to prepare well-educated citizens who respond creatively and conscientiously to the contemporary challenges we encounter as a scientifically advanced society.

To fill the void of teachers in shortage areas, alternative teacher certification routes were created as a quick fix to ensure that each year schools were equipped with staff. New Jersey was the first state to adapt an alternate route to teacher certification. Since then, each state has implemented some form of alternative teacher certification. Examples of thriving national
programs are: Teach For America, New York City Teaching Fellows and the Math for America Fellowship Program.

After the revision of the *Elementary and Secondary Education Act (ESEA)*, now referred to as the 2001, *No Child Left Behind Act (NCLB)*, each state was forced to revisit their alternative and traditional certification routes and align their program requirements with the more stringent state specific mandates to ensure that each graduate was classified as a “highly” qualified teacher based on the following *NCLB* act definition:

(23) **HIGHLY QUALIFIED**- The term ‘highly qualified' —

(A) when used with respect to any public elementary school or secondary school teacher teaching in a State, means that —

(i) the teacher has obtained full State certification as a teacher (including certification obtained through alternative routes to certification) or passed the State teacher licensing examination, and holds a license to teach in such State, except that when used with respect to any teacher teaching in a public charter school, the term means that the teacher meets the requirements set forth in the State's public charter school law; and

(ii) the teacher has not had certification or licensure requirements waived on an emergency, temporary, or provisional basis (U.S. Department of Education, 2010).

*NCLB* did not call for the discontinuation of alternate certification pathways, and it does not suggest one certification route over the other. The act forced certification-granting institutions to be more accountable and align their certification requirements with statewide requirements.

In 2000, the New York City Teaching Fellows (NYCTF) program was established as an alternate pathway to meet the need of teachers in shortage areas. While also ensuring they met the highly qualified criteria. To date, approximately 8,700 program completers are currently teaching in New York City public school system. Twenty-two percent of the NYC math teachers
are NYCTF (http://www.nycteachingfellows.org/). However, New York City public schools are still faced with the challenge of supplying qualified teachers in math and science.

Previously, teacher preparation initiative educators, colleges, policymakers, and private institutions recognized the dire state of teacher preparation in the STEM areas and worked predominantly with private and public institutions to develop partnerships that reinforced and promoted the development of teacher preparation programs for math and science educators. One example of such a partnership was the collaboration of New York University, the Department of Education, The City University of New York (CUNY) and the Carroll and Milton Petrie Foundation in the development of the Teacher Academy. The initial funding for the program was presented by the Petrie foundation to NYU and CUNY as seed money, with the goal of developing sustainable teacher preparation programs for STEM educators.

Today New York City currently has several alternative pathways to teacher certification: NYC Teaching Collaborative; Teach For America; New Visions for Public School-Hunter College Urban Teacher Residency/ Math & Science Teacher Residency; I-START Urban Teacher Residency program; Teaching Residents at Teachers College; Math for America Fellowship Program; Peace Corps Fellows Program; American Museum of Natural History-Master of Arts in Teaching Urban Residency Program; and the New York City Teaching Fellows (http://schools.nyc.gov/TeachNYC/certification/alternatives.htm).

Most recently, the United States Department of Education has proposed revising the rules in Title II of the Higher Education Act, which previously required that the tests of success on content knowledge be reported by colleges of education to the Secretary of Education. Almost none were found deficient. The new rules require evidence that graduates of programs enhance
the achievement of their K-12 students using value added measures and also endorses CAEP as a way to do this.

**Teacher Academy**

To address the shortage of teacher candidates in varied areas, several programs have been created to address need and to provide high need New York City public schools with teachers in shortage areas of mathematics, science and TESOL. By 2000, a number of pathways into teaching in New York City existed, including the option of hiring teachers without teacher preparation and an undergraduate degree. However, the New York State Board Regents sued the City to require certified teachers in all failing schools (Boyd et al., 2008b). This led to pressure on schools of education to graduate qualified program completers at a faster rate. CUNY absorbed the most of this demand and received support from various funding sources. The university, which is responsible for graduating a large percentage of NYC teachers, implemented several teacher education programs to address the shortage areas. The most popular of these programs are the New York City Teaching Fellows and Teach for America. Later, the Teacher Academy was created in an attempt to graduate high quality teachers. In this study, I will discuss the various phases of the Teacher Academy, the Partnership and the impact of the program on CUNY schools that hosted the program.

First, the Teacher Academy preceded all of the changes in teacher education accreditation and in federal regulations, so in a sense it anticipated what was coming. The Teacher Academy was implemented through the New York City Partnership for Teacher Excellence (PTE, or Partnership), in a partnership with three large city, state and private institutions/agencies: the New York City Department of Education (DOE) the City University of New York (CUNY) and New York University (NYU). A private foundation- the Carroll and Milton Petrie Foundation,
which is recognized by President Obama as one of the largest private donors in teacher education and reform, provided the majority of the funding for this program at $15 million dollars. The primary aim of the partnership was to significantly increase the number of highly effective teachers in shortage areas: mathematics, sciences and TESOL, entering the New York City public school system. At CUNY, college programs focused on the preparation of teachers in mathematics and the sciences (Biology, Physics, Environmental Science and Chemistry) at the undergraduate level. By contrast, NYU students were enrolled in the program at the graduate level in mathematics, sciences (Biology, Physics, Environmental Science and Chemistry) and TESOL programs (ARETE, 2009). The organization of the partnership was based on research on teacher education, and the program adopted best practices of alternative & traditional certification programs.

The Teacher Academy was designed as a selective undergraduate teacher preparation program. High school students applied directly to the Teacher Academy on their CUNY application and began working in classrooms the summer before their academic semester began. The reasoning, behind admitting recent high school graduates, was that Teacher Academy candidates would be more successful as they were closer in age to the students they would be teaching and were more familiar with classroom settings as they were recent graduates and had a better idea of classroom pedagogy than novice teachers. The targeted and accepted candidates were students who met the following criteria: (1) a minimum high school cumulative average of 80-85; (2) a minimum math and science course average of 80-85; (3) a minimum 80-85 on Math and Science Regents exams (Physics, Earth Science, Chemistry, Living Environment, Math A and Math B) or equivalent exams for applicants outside of NYS; (4) high SAT (target score of 1150, math 600 and verbal 550+) or ACT scores; (5) strong recommendations, with at least one
from a math or science teacher; (6) a well-written essay that described their desire to pursue a career in teaching; and (7) a demonstrated interest in teaching (involvement in tutoring programs, summer employment with youth, or any additional activities involving teaching or mentoring).

The actual admission criteria used by each of the seven CUNY campuses, was based on the freshman admission criteria for each of the CUNY campuses. The admissions criteria of the program superseded the baseline admission standards for each participating campus, and each applicant was accepted to the school in which they applied for the Teacher Academy. Students who met the majority of the required criteria, and earned borderline SAT scores or Regent examination scores, were invited to interview for the program and were further screened for admissions. In addition, each host college had the opportunity to implement additional admissions criteria native to their individual campuses.

The Teacher Academy originated at New York University and in the seven senior CUNY colleges with education programs and was extended to two community college programs throughout the five boroughs in its second year. The Teacher Academy programs were implemented in CUNY’s colleges with Schools of Education. The program was originally housed in the following colleges:

**Senior Colleges**

- Brooklyn College (BC)
- The City College of New York (CCNY)
- College of Staten Island (CSI)
- Hunter College (HC)
- Lehman College (LC)
Ultimately, three community colleges served as feeders for two senior colleges, and administrators worked collaboratively to assist in the transitional phase of students. Queensborough Community College became a feeder school to Queens College; Borough of Manhattan Community College became a feeder school for Hunter College and Hostos Community College became a feeder school for Lehman College and City College.

The Teacher Academy was introduced as a new and innovative model of undergraduate teacher preparation. The goal of the program was to take young dedicated math and science students through an intensive undergraduate teacher preparation where students participated in internships and fieldwork seminars each semester; started their education course sequence in their sophomore year, and completed major courses with college professors who used non-traditional collegial level pedagogy in their classroom. Students in the Teacher Academy followed a rigorous, creative curriculum and were immediately introduced into New York City public middle and high school classrooms, the summer prior to their first semester taking college-level courses. The aspiring teachers began their internship component in a public school from the first day of classes, commencing with their summer “mathematics and science boot
camp” program. The goal was for each prospective teacher to be trained with special thoroughness for the vocation through the completion of over one thousand internship hours in schools or other learning environments before they graduated (Teacher Academy, 2010). The majority of the Teacher Academy candidates across the campuses began taking education courses in their sophomore year and their courses were tailored around their public school internship experience. This program was unlike most traditional teacher education programs where teacher education candidates apply to the school of education in their sophomore year after taking various pre-requisites and/or general education courses. The program was based on the foundation of early immersion and the modeling of pedagogy through first hand experiences.

Teacher Academy students were also actively engaged in courses designed to help them reflect on teaching and learning. Participants registered for college courses with math and science faculty who modeled pedagogy of exemplary math and science instruction. This created opportunities for students and current faculty to understand the relationship between cognition and instruction on both the collegiate and secondary school levels, and to begin the exploration of what it means to be lifelong learners. The goal of the Partnership was to address the issue of preparing additional New York City public school math and science educators. The CUNY Teacher Academy opened its doors to its first cohort of students in August 2006, and its mission was to produce exemplary math and science teachers.

In the discontinuation of admissions to the program, the program was abruptly discontinued. This was a direct result due to the lack of funding from the Petrie Foundation, the inability to sustain the Teacher Academy programs at individual campuses, and the resignation of former Executive Vice Chancellor, Selma Botman, forced each Teacher Academy host college to determine the status of their program and where the funding to continue the program would
come from. Some colleges were supported by their college presidents and the Teacher Academy program continued with internal funding from their campuses. Other college’s presidents were not as eager to support the programs and existing programs were either dissolved or funded by external sources. From 2011-2013, Teacher Academy programs were funded through the National Science Foundation’s (NSF), Robert NOYCE education fund and this supported students in their last years and provided funding for the modification of Teacher Academy programs on individual campuses that were aligned with the Partnerships goal of campus sustainability. The following senior colleges housed modified Teacher Academy Programs that were funded by NOYCE grants and campus-specific funding:

- Brooklyn College (BC)
- The City College of New York (CCNY)
- College of Staten Island (CSI)
- Hunter College (HC)
- Lehman College (LC)
- Queens College (QC)
- York College (YC)

After three years of funding, on September 2009, the CUNY Teacher Academy officially discontinued admissions into the program, under the supervision of former Executive Vice Chancellor, Alexandra Logue, in response to a report presented by the University Working Group on Math and Science Teacher Preparation at CUNY and the other variables aforementioned. The three cohorts of admitted students have graduated and were funded through
their four years in the program. Hunter College participants were the only students who were required to complete a five-year BA/MA program and received funding for five years.

The Teacher Academy program was labeled as a traditional teacher preparation program, but it may be classified as an alternate route, as the entry point of students in the field is similar to the characteristics of an alternative teacher certification program. There is no clear distinction in categorizing teacher preparation programs in either the alternative or traditional pathway category. This is especially the case within New York City teacher preparation programs. Boyd, et al. (2008a) suggest there is no clear distinction between traditional and alternative routes to teacher education. An example is teacher education programs in New York, where universities offer multiple types of programs, and teachers must all take the same course requirements. Therefore, candidates in both routes take similar courses. The difference here is when during the program that they complete courses.

Recently, developed teacher certification programs have adapted features of both standard alternative and traditional teacher preparation pathways. Educational researchers often refer to alternate routes to certification as any pathway that is not a traditional undergraduate program where teacher candidates are admitted into a school of education in their junior year and complete student teaching in their last semester.

**Justification of the Study**

Since the beginning of formal teacher preparation, various routes to entering the teaching profession have been implemented and have produced the teachers who have and continue to serve our nation. In aligning with shifts in professional and curriculum standards, teacher education preparation institutions consistently modify and adapt their programs to ensure that their courses of study adhere to the constant shifts in national standards and curriculum. States
continue to experiment on the best ways to recruit, prepare, and retain teachers. Yet, policy debates about the relative value of teacher education and the benefits of different pathways into teaching are replete with opinion and lean on data (Boyd et al. 2008a).

With the different routes to certification it is imperative that these programs are assessed. Productive strategies for evaluating outcomes are becoming increasingly important for the improvement, and even the survival, of teacher education (Darling-Hammond, 2006). The federal Higher Education Act now requires that schools of education be evaluated based on graduates’ performance on licensing tests, and CAEP now requires that teacher preparation programs, provide evidence of outcomes as they respond to each of the accreditation standards. The question remains concerning the methods used for teacher preparation programs to incorporate key features of alternative and traditional teacher education preparation programs to create effective teacher education preparation models that will produce “highly qualified” teachers. How can we identify those teachers who have completed teacher preparation programs that have exposed them to teaching and learning in several capacities and not only the student teaching phase? How do we ensure that teacher preparation program completers are equipped with the skills to shift their pedagogy with shifts in curriculum? How do we prepare teachers who can adapt to these shifts based on the induction of new standards and are able to effectively prepare students to meet the targeted marks on standardized examinations? How do we prepare teachers with a strong grasp of the pedagogical content knowledge, the diverse need of student populations, knowledge to create a democratic classroom and a disposition that will foster a safe environment for teaching and learning?

The objective of this study is to present an analysis of the Teacher Academy through its four phases: (1) the planning phase—the pre-implementation phase of the Teacher Academy and
the original mission and vision of the involved constituents; (2) the implementation phase—the
diverse implementation models of the Teacher Academy on the senior college and community
college level and the underlying political ramifications of the program; (3) the discontinuing of
admissions phase—the final phase decision by CUNY central to discontinue open admissions to
the Teacher Academy and the adaption of the program in two selected senior colleges; and (4)
the student completion phase—how prepared graduates of the Teacher Academy are before
entering the classroom and teaching profession with regard to their major course of study, pre-
service fieldwork in host schools, student teaching, and education courses. In addition, this study
will compare and contrast the characteristics of alternative and traditional certification routes,
focusing on the three key areas of teacher preparation programs: Candidates demonstrate
knowledge, skills, and professional dispositions for effective work in schools; data driven
decisions about candidates and programs; and resources and practices that support candidate
learning (http://caepnet.org/standards/interim-standards/). The study will conclude with a review
of the lessons learned in regards to implementing innovative teacher preparation programs. The
following framework guides this study:

A. Program Goals and Expectations (Planning Phase)

B. Recruitment, Application, and Selection (Implementation Phase)

C. The Program (Planning & Implementation Phase)

1. Overview

2. Formal Instruction

3. Field Experience

4. Supervision

5. Evaluation of Participants
6. Program Evaluation

D. Comparison of Program to Alternate & Traditional Teacher Preparation Programs
Research Questions

The following chart depicts the research questions the study explored, the methodology employed to evaluate each research question, and the tools used to analyze the collected data:

Table 1.1

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Research Method</th>
<th>Method of Analysis</th>
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<tbody>
<tr>
<td>How did the profile/characteristics of Teacher Academy candidates differ from traditional and alternate teacher preparation programs?</td>
<td>Review student admission applications (GPA, College CAA, SAT Scores, Regents exams- math &amp; science and prior experience with teaching, and review personal essays).</td>
<td>Statistical analysis of gathered data, code notes, and materials</td>
</tr>
<tr>
<td>How did the planned features and components of the Teacher Academy differ from and were similar to alternate and traditional teacher preparation programs? How do these features align with the presented conceptual frameworks of: constructivism, legitimate peripheral participation, and communities of practice?</td>
<td>Review archival material and national teacher certification and preparation material.</td>
<td>Develop matrix describing program features of the Teacher Academy and an analysis of the features of traditional and alternative teacher preparation programs using the conceptual frameworks.</td>
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</table>
Table 1.1 cont’d

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Research Method</th>
<th>Method of Analysis</th>
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<tr>
<td>How did the views of the various constituents (Petrie Foundation, CUNY Central, NYU, and DOE Partnership for Teacher Excellence) influence the three phases of the Teacher Academy (planning, implementation &amp; closure phases)?</td>
<td>Review program related documents</td>
<td>Code notes and materials according to concept and associated phase of the Teacher Academy</td>
</tr>
<tr>
<td>What were some of the ideological perspectives and underlying beliefs regarding the mission and purpose of the CUNY Teacher Academy? What were the lessons learned about implementing a new innovation?</td>
<td>Interview Selma Botman and third-party evaluator (Ed Crowe)</td>
<td>Develop matrix describing ideological perspectives of individuals and each constituent. Code notes and materials.</td>
</tr>
<tr>
<td>How did the Teacher Academy semester-based seminars, fieldwork curriculum guide, and fieldwork experience influenced students’ pedagogy, teaching style, disposition and philosophy of education?</td>
<td>Interview former Teacher Academy students and review the final report of the teacher Academy.</td>
<td>Develop a matrix describing the role of the seminar and field experience. Use document analysis in reviewing the final report of the Teacher Academy.</td>
</tr>
</tbody>
</table>
List of Terminology

In this study the following terminology will be used and are distinctive to the Teacher Academy and the collected data:

- **Aspiring Teachers (ATs)** - CUNY students enrolled in the Teacher Academy at the senior colleges. All Aspiring Teachers were admitted to individual senior campuses based on campus specific criteria and general campus based admission criteria and were processed through the University Application Processing Center (UAPC).

- **Collaborating Teachers (CTs)** - Department of Education secondary education teachers in the participating host schools who were assigned to one or more Aspiring Teachers. Collaborating Teachers were selected to participate in the Teacher Academy in-service component by their Principals and Assistant Principals. The selection criteria varied by school and included teacher interest, discipline taught and skill level. Teachers were not selected based on tenure.

- **Host School Liaisons** - Hired by each college campus to supervise Aspiring Teachers. Host School Liaisons also worked with Collaborating Teachers and Host School Principals to ensure that Aspiring Teachers were on track and were assigned to teachers for in-service classroom observations. The number of hired Host School Liaisons was based on the number of Aspiring Teachers on each college campus. Host School Liaisons were Urban Education doctoral candidates from the CUNY Graduate Center.

- **Host School** - New York City Department of Education schools that were selected and approved by the Partnership for Teacher Excellence. The majority of the participating schools were deemed as high need schools based on the percentage of students eligible for reduced/free lunch.

- **Department of Education (DOE)** - The New York City Department of Education which encompasses 1,800 schools across the city (http://schools.nyc.gov/AboutUs/default.htm). Teacher Academy students completed all in-service components of the program in DOE schools. In addition, several DOE administrators participated in the planning phase of the
Teacher Academy and assisted in Aspiring Teacher placements and observations. They also provided Professional Development for Collaborating Teachers and led sessions on the Santa Cruz Standards.

- **Partnership for Teacher Excellence (PTE)**- is a collaboration of the following three large institutions: The New York City Department of Education (DOE), the City University of New York (CUNY), and New York University (NYU). The partnership was created to increase the number of certified teachers in shortage areas; specifically mathematics, the sciences and Teaching English to Speakers of Other Language (TESOL).

- **City University of New York (CUNY)**- The City University of New York central Administrators. The key CUNY representatives were Mr. John Garvey, Dr. Selma Botman and Dr. Alexandra Logue

**Conceptual Framework Definitions**

**Constructivism**- an epistemology, that focuses on learning or meaning-making theory that offers an explanation of the nature of knowledge and how human beings learn. It maintains that individuals create or construct their own new understandings or knowledge through the interaction of what they already know and believe and the ideas, events, and activities with which they come in contact (Fosnot, 2005).

**Legitimate Peripheral Participation**- a conceptual framework that provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artifacts, and communities of knowledge and practice. It suggests that a person’s intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in socio-cultural practices (Lave & Wenger, 1991).

**Communities of Practice**- are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. Communities of practice are developed through a variety of activities that are completed by a group of individuals in the same domain, within a community where they become practitioners (Lave & Wenger, 1991)
Chapter 2- Review of Literature

This literature review covers the topics surrounding teacher preparation and the pathways in which teachers enter the teaching profession. It briefly introduces the Teacher Academy program. It also explores the current trends in education, and how they are influencing teacher preparation. In addition, it addresses the history of teacher certification and teacher preparation routes in the United States. It finally goes on to explore teacher preparation in New York City.

The Teacher Academy

Today's students will be tomorrow's local and global leaders. The Teacher Academy is an innovative partnership between The City University of New York (CUNY) and the New York City (NYC) Department of Education, uniting to ensure New York City's student experience the highest quality of Science Technology Engineering and Mathematics (STEM) education (CUNY Teacher Academy).

The Teacher Academy was introduced as a new and innovative model of undergraduate teacher preparation. The goal of the program was to take young dedicated math and science students through an intensive undergraduate teacher preparation where students participated in internships and fieldwork seminars each semester; started their education course sequence in their sophomore year, and completed major courses with college professors who used non-traditional collegial level pedagogy in their classroom. Students in the Teacher Academy followed a rigorous, creative curriculum and were immediately introduced into New York City public middle and high school classrooms,
the summer prior to their first semester taking college-level courses. The goal of the Partnership was to address the issue of preparing additional New York City public school math and science educators, the CUNY Teacher Academy opened its doors to its first cohort of students in August 2006, and its goal was to produce exemplary math and science teachers.

**Science, Technology, Engineering and Mathematics**

Teaching and teacher education are imperative practices in societal development, and “their consequences percolate throughout society, thereby giving rise to a public concerned with their substance, quality, and effects” (Hansen, p.18, 2008). In his State of the Union address (2010), President Barak Obama, identified the STEM disciplines and student achievement in these areas was a priority and he stated, “The quality of math and science teachers is the most important single factor influencing whether students will succeed or fail in science, technology, engineering and math…..” (State of the Union Address, 2010). In the 2014 State of the Union address, President Obama continued to express a deep concern with the state of STEM education in the United States, and he expressed the importance of, “preparing students with skills for the new economy – problem solving, critical thinking, science, technology, engineering, and math.”

Supporters of President Obama’s position on STEM education believe the development and strengthening of all education, especially in the STEM disciplines, and argue that it is imperative in the preparation of students to compete in the 21st century economy. Obama’s supporters often suggest that the recruiting and training of STEM educators will provide the resources necessary to move the nation from the middle to the top of the pack in math and science education. President Obama has extended his influence on education and has included the preparation of students to compete in a global economy as a prime tenant in both his Race to the TOP
educational stimulus as well as proposing the reauthorization of the Elementary and Secondary Education Act (U.S. Department of Education, 2010). Funding from Race to the Top has been used extensively by teacher preparation programs to modify their programs to meet the modifications in teacher certification requirements.

National data sources project that by the year 2017 there will be a 28 percent increase in the number of classroom teachers needed, with approximately 364,000 teaching vacancies in the United States (Hussar & Bailey, 2008). President Barack Obama’s, “Educate to Innovate” campaign projected the training of 10,000 math and science teachers through $250 million of private and federal funding in 2015 (State of the Nation address, 2010). The expected hiring increase and new funding for teacher preparation in the Science, Technology, Engineering and Mathematics (STEM) disciplines, supports the development of new pathways to teaching, especially in mathematics and the sciences. To provide funding for reforms, President Obama signed into law, the American Recovery and Reinvestment Act of 2009 (ARRA). The ARAA provided $4.35 billion in grant money for states, to fund the creation of education reform projects that aim to do the following; significantly improve student outcomes, yield substantial gains in student achievement, close achievement gaps, improve graduation rates, and prepare students for success in college and careers, through the implementation of four identified core education reform areas (http://www2.ed.gov/programs/racetothetop/executive-summary.pdf). As a result, programs similar to the CUNY Teacher Academy that focus on the preparation of STEM discipline educators, were continuously developed to fill this void. These types of programs often provide participants with incentives (including loan forgiveness, free tuition, stipends, hiring priorities, etc.), in an attempt to obtain the best-qualified teacher candidates to
fill anticipated vacancies and to encourage program completers to remain in the teaching profession.

However, STEM education has remained the most pressing issue on the forefront of education, as the state of the nation is rated by their advancements in the sciences and technology. Approximately thirty years after the release of “A Nation at Risk” report the United States is still labeled as “at risk”, as American students continue to lag in math and science when compared to their peers around the world. The National Center for Education Statistics, 2014 Program for International Student Assessment (PISA) review of 15 year-old students concluded, in comparison to sixty-five nations and territories, the United States ranks 30th in mathematics and 25th in science amongst the participating countries (http://nces.ed.gov/surveys/pisa/pisa2012/pisa2012highlights_1.asp). The 2013, assessment of the American College Testing (ACT) exam, indicates that only forty-four percent of our high school graduates are ready for college-level math, and thirty-six percent are ready for college-level sciences (http://www.act.org/research/policymakers/cccr13/readiness1.html).

Regardless of the initiative or driving force, the ultimate goal is to effectively train educators, especially in the STEM areas. Ongoing debates by school districts, educational institutions, parents, and other constituents about teacher preparation (how teachers should be educated; what makes a good teacher; what capacities teachers need to be exemplary teachers; what is the content knowledge needed to effectively teach mathematics and sciences; and what teachers should know to prepare students for the ever changing 21st century and beyond) have set the tone of the development of teacher preparation programs (Grant, 2008; Grossman & Loeb, 2008; Feistritzer & Haar, 2008). In the development of new teacher preparation programs, traditional teacher preparations were phased out or revamped and research on the development of
alternative certification education programs became a priority. Some educators argue that the pathwa
y in which individuals enter the teaching profession influences the academic success of their stu
dents. Others claim that it is not the pathway through which teachers are certified—it is the characteri
stics of the preparation route that are relevant. I advocate that a model teacher preparation program is one that provides teachers with a balance of fieldwork experience, pedagogical content knowledge, content knowledge, and opportunities for the development of a personal disposition, and the development of teaching and learning skills. Teacher preparation programs that are aligned with the Council for the Accreditation of Educator Preparation (CAEP) standards. CAEP is adapting a new set of standards and the current interim standards are: (1) Standard 1- candidates demonstrate knowledge, skills, and professional dispositions for effective work in schools; (2) Standard 2- data drive decisions about candidates and programs; and (3) Standard 3- resources and practices support candidate learning (http://caepnet.org/standards/interim-standards/).

The ultimate obstacle is to highlight the unique characteristics of each pathway into the teaching profession and integrate these multiple components to create structured teacher preparation programs, which yield well-prepared teachers in all disciplines. Boyd, Grossman, Lankford, Loeb, Michelli, and Wyckoff (2008b) suggest that different pathways into teaching can result in the hiring of teachers in schools with different characteristics based on the pathway that was completed. For example, some alternate route programs require their graduates to teach in under-resourced, high-poverty schools, whereas graduates of traditional programs have more choice about the kind of school in which they want to teach. The researchers go on to suggest, that one of the primary differences in pathways is the amount of preparation and experience new teachers have before becoming the teacher of record (Boyd et.al, 2008b). The Boyd et.al,
(2008b) study concludes, that there is a need for allocation among a number of different stakeholders in teacher education, and illustrated the advantages of such collaborations among public and private institutions of higher education and multiple levels of government. These partnerships are essential and will provide researchers with the opportunity to assemble the necessary data to study important educational issues. The Teacher Academy is an example of how partnerships can work, but unfortunately the program was not supported long enough to gather sufficient data that could be used to influence teacher preparation programs.

**History of Teacher Certification and Teacher Education**

The history of teacher preparation has influenced the progression of teacher preparation and educational systems in the United States. The teaching profession was originally composed of informal schools where classes were taught by persons identified as qualified based on their moral character and good nature (Angus, 2001; Feistritzer & Haar, 2008). In colonial America, teachers were granted the authority to teach by one or more of the local ministers after displaying they had more knowledge than the eldest student in the class and by passing a morality and ethics interview. Americans were skeptical of the one-size-fits-all program, as rural communities believed that good teachers were born and could not be made and only minimal pedagogical training was needed. In opposition to this ideology, large cities and towns were eager to train teaching professionals through formal teacher preparation programs and certification requirements (Angus, 2001). The first formal teacher preparation programs were documented in 1750. They were housed in Ivy League Colleges and only accepted white males. These programs often produced teachers who taught temporarily and moved on to various careers after teaching for a short time (Fraser, 2007). In subsequent years, the authority of
licensing shifted from ecclesiastical to city authorities, and certification exams expanded to test the knowledge of subject matter and pedagogy.

Teacher certification began in the 19th century where schooling in rural areas and teacher preparation in the cities and towns were two separate entities (Angus, 2001). To bridge the gap and bring uniformity to schooling and teacher preparation, professional educators pushed the requirement for all professional educators to complete formal training programs before entering the classroom. Educational institutions created normal schools (teacher-training colleges) that were two-year post-eighth grade education programs to prepare teachers to teach on the elementary school level. As the population of high school aged students increased, teacher education institutes were forced to extend their teacher certification programs to prepare high school teachers. As a result, many normal schools evolved into four-year teacher colleges. In 1843, New York responded to the need for certified teachers by authorizing its state superintendent to set examinations and issue statewide teacher certificates after completing comprehensive examinations that included spelling, arithmetic, geography, history and English grammar (Angus, 2001). To manage the lack of professionalism and standards of teacher preparation programs, professional educators gained greater control over the nation’s schools and the licensing of teachers, in the first three decades of the 20th century. Rural communities lost the ability to recruit teachers for their schools, and teacher certification requirements became stringent. To minimize the number of mediocre teachers that entered the classroom watered down old teacher certification exams and inadequate teacher education preparation programs were phased out and replaced with more stringent programs (Angus, 2001).

By 1938, all states required some professional training requirements for each teaching certificate they offered (Fraser, 2007). This came just in time as a peak in the number of teachers
was needed, during World War II and the post war years, as male teachers were drafted to war, and undertrained females were expected to fill the teacher vacancies. Professional teacher organizations recognized the lack of training of individuals entering the teaching profession during this time and the “professional standards movement” was initiated in an attempt to monitor the quality of teacher preparation programs (Feistritzer & Haar, 2008). In 1954, the National Council for Accreditation of Teacher Certification (NCATE), which is now the Council for the Accreditation of Educator Preparation (CAEP), was formed as a professional review board of teacher education programs, to address the issue of the certification of underprepared individuals and to manage the accreditation of teacher education programs in universities (caepnet.org).

The 1957 launch of the Russian satellite Sputnik resulted in the deeming of the state of the nation’s educational system as a national concern once again, as society blamed the colleges of education and referred to the curriculum of the education system as “Mickey Mouse” courses. The launch of the satellite displayed national levels of advancements in the STEM disciplines by other countries besides the United States, and the lag of achievement in these areas by the United States. Critics argued that science and math education in the United States was inferior to the Soviet Union, and teacher education programs had low standards of entry, mediocre exit requirements, and the absence of reliable evidence that teacher training had a relationship to effective classroom teaching (Angus, 2001; Grant, 2008). The federal government took a vested interest in education and enacted the National Defense Education Act (NDEA), which provided funding on the state and local level to strengthen instruction in the critical subject areas (eg. mathematics, science, foreign language) at all levels. The Johnson
Administration allocated additional funding to education and aimed to build a “great society” around educational achievement (Feistritzer & Haar, 2008)

Approximately three decades later, the educational state of the nation in comparison to other countries continues to be questioned. In the 1983 publication of the National Commission on Excellence in Education report, *A Nation at Risk*, suggested, “if an unfriendly foreign power had attempted to impose in America, the mediocre educational performance that exists today, we might well have viewed it as an act of war” (p. 5). The *A Nation at Risk* report praised the field experience teacher preparation programs provided and made it clear that the teaching profession should be strengthened by raising professional standards for training, entry requirements, exit requirements, and professional growth. The report also set the tone of the 1986 release of two major reports on education that called immediate attention to the restructuring of teacher education in the United States: *A Nation Prepared* published by the Carnegie Forum on Education and Economy and the Holmes Group of Education Deans’ *Tomorrow’s Teacher*. Each document reiterated the theme of the *A Nation at Risk* report, and set the agenda for the reform of teacher preparation programs (Fraser, 2007). Teachers and teacher preparation institutions were scrutinized, and it was determined that major reforms in teacher preparation were needed. Schools of education were labeled as ineffective in the preparation of teachers, unresponsive to new societal demands, and deficient in recruiting bright college students into teaching (Darling-Hammond & Bransford, 2005). Teacher preparation programs were expected to focus on the knowledge, skills, and dispositions that provided educators with a framework to teach higher-level thinking in the areas of mathematics and science (Grant, 2008). Critics of teacher preparation programs argued that the capacities of teachers should be grounded in the humanities and sciences, and those same critics called for the discontinuation of undergraduate
teacher education programs. The Holmes Group advocated for post-baccalaureate teacher preparation programs in which teacher candidates held a Bachelor’s degree in their content area and earned a Master’s degree in education (Grant, 2008). The National Commission on Teacher Excellence recommended higher standards for teacher preparation programs and the staffing of teacher shortages with uncertified persons who had the appropriate subject matter expertise.

The next milestone in teacher education and teacher certification was the *No Child Left behind Act (NCLB)* of 2002, which is the reauthorization of the Johnson administration *Elementary and Secondary Education Act (ESEA)* of 1965. The federal *NCLB* act stresses accountability and is built on four principles: accountability for results, more choices for parents, greater local control and flexibility, and an emphasis on doing what works based on scientific research. Opposing camps of the four principles of the act argue that the *NCLB* act encourages educators to follow a narrow academic oath and focus solely on accountability while ignoring the comprehensive mission of schools. As a result, youth are being denied the breadth and depth of education needed to prepare them for an ever-changing society (Goodlad, 2008). However, one feature of the act that provided consistency in the qualifications of hired teachers was the call for a “qualified teacher” in every classroom, who was required to be more skilled than teachers in the past (Boyd et al., 2008a). This was imperative as various teacher shortages were filled with undertrained teachers who entered classrooms through alternate routes with temporary licenses and often without formal teacher education coursework. To address the demands of the act, alternative routes were modified and revamped to ensure that teacher candidates were adequately prepared to enter classrooms, and the Board of Regents phased out temporary licenses in 2003.
Teacher Certification and Preparation Pathways

The history of teacher education and certification in the United States clearly outlines the continuous teacher shortages that have affected the nation’s educational system. During each historical shortage of professional educators, certifying institutions and education authorities were faced with the challenge of filling teacher vacancies with qualified persons. They also developed various pathways to address teacher shortages and to uphold the standards of the teaching profession by regulating teacher certification on the state and local level. In the development of pathways, a division occurred as traditional teacher preparation programs failed to produce teachers fast enough to keep up with the growing demand for certified teachers.

Critics of both alternative and traditional teacher preparation programs do agree that in order to better prepare teachers, successful components from both alternative and traditional certification programs should be integrated to create a superlative teacher education program (Feistritzer & Haar, 2008; Grossman & Loeb, 2008). In order to identify the deficiencies and true components of teacher preparation programs, we must first distinguish between the illusory and genuine preparation features, and look at the realities of each pathway—not the advertised characteristics that are generally not aligned with the actual features of a preparation program (Angus, 2001). Opposing camps also recognize the gaps in teacher preparation research and argue that a one-size-fits-all model for teacher preparation is not effective. Educators are expected to cater to a diverse student population where the standard curriculum fits few (Ohanian, 1999). However, as time and curricula change; as events in education have left historical consequences; and as developments in science and mathematics have led to technological advancements, society and the government have made demands for performance standards and accountability to not only keep up with the change in education but also to set
trends and lead reforms themselves (Grant, 2008). This in turn has led to amendments in teacher preparation and certification requirements and the push for teachers to understand the relationship between content knowledge and pedagogical content knowledge, especially in the STEM disciplines (Grant, 2008).

As a result, there are a myriad of teacher preparation programs that aim to fill subject shortage areas (mathematics & science) and achieve the goal of equipping each classroom with a “highly qualified teacher” (as defined by the No Child Left behind Act). Alternate/alternative pathways to teacher certification were created as an expeditious route to fill teaching vacancies in critical shortage areas, especially in mathematics and science (Zeichner & Hutchinson, 2008; Feistritzer & Haar 2008; Grossman & Loeb, 2008). Documented alternate routes emerged and introduced a diverse population of teachers into the profession during the mid-1980s. Alternatively-certified teachers entered classrooms, and many critics felt that their short fieldwork experience and education coursework left them ill equipped and underprepared in comparison to traditionally certified teachers. Supporters of alternate routes believed that alternative pathways to teaching expanded the hiring pool of available teachers and increased the number of individuals who may not have entered the teaching profession through a traditional education program.

The lack of clarity in the classification of alternate and traditional teacher preparation programs and the components of each has led to the debate of the quality of graduates from each pathway. Some supporters of alternate routes believe that alternative pathways attract career changers who are older, more mature, and more committed to the teaching field. Studies have found that these characteristics are not true of older candidates as they have abandoned other careers to enter teaching, and their retention rates are identical to graduates of traditional
preparation programs (Hammerness & Reininger, 2008). Critics of both routes believe that the focus of educational research should shift to identifying the program features of each pathway that are most effective in preparing particular groups of individuals to teach and create ideal teacher preparation programs (Angus, 2001). Regardless of the pathway to teaching that individuals favor, we must keep these two factors in mind: (1) pathways into teaching can lead teachers into schools and classrooms with different characteristics; and (2) labeling programs as “traditional” or “alternative” only masks the fact that they generally share common features and requirements (Boyd et al., 2008a; Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008b).

**Traditional Pathways**

Traditional teacher preparation programs are college recommended university-based, pre-service programs in which candidates spend time in content courses, education courses, pre-student teaching fieldwork components and complete either one semester or a full year of student teaching before becoming the teacher of record. University faculty in each teacher preparation institution, determine program requirements and align them with accreditation and state standards. Teacher candidates are recommended through this pathway after completing a state registered university based program and after passing the LAST, CST, ATS-W (Feistritzer & Haar, 2008). In comparison to alternate expedited routes, traditional teacher preparation candidates are required to complete more course credits and field experience hours before student teaching and becoming a teacher of record (Boyd et al., 2008a). Typically, traditional pathways offer some preparation in generic pedagogy, subject specific pedagogy, pedagogical content knowledge, and experience in a classroom setting.

Program directors, faculty, and participants support pre-service field experiences and believe that the completion of student teaching in a realistic classroom setting under the
supervision of a qualified teacher and skilled mentors greatly enhances a teacher candidacy and sense of preparedness. Supporters of field experiences, advocate that field experiences that are congruent with the teaching practices presented in a teacher education program, ease the transition for a prospective teacher from wanting to implement teaching strategies to actually practicing the learned skill (Cochran-Smith & Zeichner, 2005). However, often the experience of each prospective teacher varies greatly, as participants within the same program have different opportunities, depending on their subject area or their luck in being assigned to a realistic teaching experience or having a skilled and generous cooperating teacher (Johnson & Birkland, 2008).

Traditional teacher pathways often cost more to run, based on the extended hours of fieldwork and supervision required in programs (Darling-Hammond, 2000). A program that intends to prepare candidates in a number of subjects must employ at least one faculty member who is an expert in each content area, an administrator, courses specifically designed for cohorts and a Fieldwork Supervisor. Good preparation is costly (Johnson & Birkland, 2008). In an analysis, of course requirements and descriptions, researchers concluded that prospective teachers in college recommended programs have more opportunities to consider learning, child development, cognition, and special education, while prospective teachers in early entry programs may have more opportunities to consider issues of classroom management (Boyd et al., 2008a). Critics of traditional teacher preparation have used the National Council Teacher Quality’s (NCTQ) report as evidence that teacher preparation in the United States is broken and we need to “fix” the system by either radically changing traditional university-based programs and/or abandoning traditional programs in factor of alternative programs (Fuller, 2013).
Traditional pathways to the teaching profession provide candidates with many opportunities to engage in teaching and learning with the opportunity to develop their pedagogy and teaching skills over a longer period of time. Graduates of college-recommended programs report spending a good deal of time doing mathematics, while participants in early-entry programs report significantly less opportunity to do so (Boyd et al., 2008b). In this time of teacher shortages, teacher preparation programs are not producing program completers fast enough to keep up with demands of classroom teachers. Three critical questions for teacher preparation programs and local school districts to answer remain: How do we address the demand for qualified teachers in large education systems similar to the New York City public school system?; How do we furnish large school systems with teachers in the critical shortage areas, especially in the STEM disciplines?; How do we select the best qualified teachers to enter classrooms?

Alternate/Alternative Pathways

Alternate pathways into teaching have been around since the existence of teacher education. However, over the past decade there has been an expansion of alternate route specialized programs that aims to attract a specific population, to fill staffing shortages in particular states, school districts, and schools. Alternative routes to teacher preparation are traditionally defined as any pathway into teaching other than the traditional, college- or university-based undergraduate bachelor’s or bachelor’s/master’s teacher preparation programs (Grossman & Loeb, 2008). However, this definition is modified by each state—some states deem any master’s level teacher preparation program an alternative program, and other states label these programs as traditional (Humphrey & Wechsler, 2008). Alternate routes to teaching were originally viewed as an endemic to teacher shortages of qualified urban teachers; these
routes were created as a substitute to using emergency certificates to fill vacancies (Hammerness & Reininger, 2008; Feistritzer & Haar 2008; Grossman & Loeb, 2008). Supporters of alternative pathways argue that alternate routes to teaching open the teaching profession to individuals who otherwise would not have selected teaching as a profession. Alternate routes to teaching also allow competent career changers to enter the teaching profession with the reduction in professional education requirements, and thereby raise the overall quality of the teaching pool. They also assume that the retention rate of these individuals will be higher, and they will be successful teachers (Zeichner & Hutchinson, 2008).

Opposing camps of alternative pathways such as the American Association of Colleges for Teacher Education (AACTE) stressed that all teacher candidates should have a professional base and this can only be achieved by the completion of education courses in schools of education that equip prospective teachers with the essential knowledge and skills needed to enter the classroom. In 1986, the AACTE issued a statement on alternative certification advocating that alternative teacher preparation programs incorporate the following features: (1) use selective admissions standards; (2) employ a curriculum that provides the knowledge and skills needed by beginning teachers; (3) incorporate a supervised internship; and (4) assure competency in the subject field and in professional studies through use of an examination (Feistritzer & Haar, 2008).

Even if a program is deemed as an alternate route to teaching, there are numerous variations in alternative certification programs. Alternate pathways differ based on: the following attributes:

- characteristics of the candidates admitted
- the entry requirements (undergraduate vs. graduate program)
• the required program coursework & fieldwork requirements
• the duration of the program (two years, five year BA/MA program, etc.)
• mentoring requirements
• preparation before assuming responsibility of a classroom
• the nature and quality of the support on the collegial and school level they receive once assuming their position as the teacher of record (Angus, 2001).

The most common program structure includes summer coursework with a short clinical practice (six to eight weeks of pre-service fieldwork), followed in the fall with the placement of the participant as the teacher of record in a classroom with mentoring support and continued course work (Hammerness & Reininger, 2008). The prior experience alternate route candidates bring to teacher preparation programs is dependent on the requirements of each program. Alternative certification routes introduce a different approach to preparation, one in which teachers are expected to develop their skills over time on the job, and the process of acquiring knowledge and expertise is distributed across several stages of the teacher’s career (Grossman & Loeb, 2008). While traditional teacher preparation programs invest heavily in pre-service training on the assumption that a rich and substantial set of courses and clinical experiences will give teachers what they need to succeed in the classroom.

**Teacher Preparation in New York City**

The New York City public school system is the nation’s largest school system and is often faced with a shortage of qualified teachers, especially in math and sciences. New York City employs almost as many teachers as the rest of New York State combined, and this is a challenge as New York City differs from other large urban areas in terms of its sheer size and complexity (Boyd, et al., 2008a). The constant challenge of hiring certified teachers (especially
in the STEM discipline areas) has led to the hiring of alternatively certified teachers and assigning teachers to teach out of license (Boyd, et al., 2008b). As the demand for high-quality teacher’s increases, disparities in teacher qualifications will only worsen; schools with better working conditions and higher salaries will attract the better-qualified teachers from already hard-to-staff schools and school districts. This trend presents a challenge to teacher preparation institutions to produce enough highly qualified teachers, particularly in hard-to-staff subjects, in addition to the difficulties schools now face in attracting and retaining these teachers (Boyd, et al., 2008a). New York City, similar to others large cities, is focusing on experimenting on how best to recruit, prepare, and retain teachers. This has become imperative as more alternative pathways are taking root, and university-based programs are now competing with programs that allow participants to earn a salary as they learn to teach. Yet although policy debates about the relative value of teacher education and the benefits of different pathways into teaching are replete with opinion, and they are lean on data (Boyd, et.al, 2008b). New York City public schools currently employ program completers from the several alternative routes to certification programs. The New York City Department of Education, list the following alternative programs below on the recruitment webpage (http://schools.nyc.gov/TeachNYC/certification/alternatives.htm):

- NYC Teaching Collaborative- a residency program that affords aspiring teachers the opportunity to apprentice in a NYC public school, for eight months, prior to becoming a full-time teacher.
- New York City Teaching Fellows- an in-service program which places candidates in a summer school training prior to becoming a full-time teacher. This model provides a coaching and advisory component, for additional support.
• Teach for America- a program which recruits individuals from various professions and provide training through the “Teaching as Leadership Framework”.

• New Visions for Public Schools-Hunter College Urban Teacher Residency/Math and Science Teacher residency- a two year residency program which prepares professionals in Teaching English to Speakers of Other Languages (TESOL), English Language Arts, Special Education, Earth Science, Chemistry, Biology and Mathematics.

• I-START Urban Teacher residency Program- a 14-month residency program which prepares teachers of English Language Learners.

• Teaching Residents at Teachers College (TR@TC2) - an 18-month (January-May), graduate-level residency program, which prepares Teaching English to Speakers of Other Languages (TESOL), Secondary Inclusive Education (SIE), or Science Education--Biology.

• Math for America Fellowship Program- a five-year program that combines a one-year Master's program in education with four years of teaching and professional development.

• Peace Corps Fellows Program- a program for returned Peace Corps volunteer educators who would like to enter the teaching profession.

• American Museum of Natural History – a Master of Arts in Teaching Urban Residency Program - a 15-month program which combines coursework at a museum, one-on-one mentoring and ongoing professional development.

New York City is investing public funds in the preparation of teachers; there is minuscule evidence of the effects of these investments. Current federal investments in teacher preparation are targeted exclusively at alternate pathways and at the graduate levels. New York City (NYC) has undertaken several initiatives to encourage individuals to teach and remain teaching in the
public school system. One of the major initiatives taken by the NYC Department of Education is the New York City Teaching Fellows (NYCTF) program. Created in 2000 in response to changes in New York state regulations regarding the certification of teachers, the NYCTF program provides an alternative route to certification designated specifically for New York City teachers. Several private universities participate in this program. However, the City University of New York (CUNY) has played a significant role in educating participants. CUNY is recognized as the prime preparer of teachers for NYC schools, and prepares the largest number of teachers enrolled in the NYCTF program (Boyd et al., 2008a). Approximately 8,700 NYCTF are currently teaching in NYC public schools, and have made a huge impact on the alternative certification pathway. In aligning with similar alternative certificate pathways, the NYCTF program consists of a short pre-service field component, limited education courses before becoming the teacher of record, and a mandatory time commitment to teaching based on the funding provided as a program incentive. The preparation of fellows has and continues to be analyzed and criticized (www.nycteachingfellows.org/). Two major studies on teacher pathways into New York City schools were completed and set the foundation of the assessment of teacher preparation programs.

**Teacher Certification**

Prior to 2000, teachers could enter the classroom with temporary licenses, with minimal teaching requirements. Numerous teachers entered the classroom through a “final college transcripts evaluation” and were given a choice on the subject they wanted to teach based on the number of credits earned in a specific content area without any additional education course requirements or required examinations. Teachers entering through this over-the-counter method were expected to complete 15 credits in education, pass the Liberal Arts and Science Test
(LAST), Content Specialty Test (CST), and Assessment of Teaching Skills-Written (ATS-W) exams to become initially certified in New York State. In 1999, the New York State Board of Regents voted to terminate the issuance of temporary licenses, effective September 2003. The State then created Transitional B licenses that allowed graduate students to teach and complete education course requirements after completing 200 pre-service hours, and passing the LAST and CST exams. This certificate is only good for three years, and upon completion of their program requirements, certificate holders receive full certification (Boyd, et al., 2008a). The state has implemented new licensure examinations for persons seeking certification regardless of the pathway, effective May 1, 2014. These exams include the edTPA, Educating All Students Test (EAS), Academic Literacy Skills Test (ALST) and the Content Specialist Test (CST) (the CST (http://www.nystce.nesinc.com/NY17_whoshouldtest.asp). New York State currently offers the following teacher certifications: (1) the initial certificate; (2) professional certificate; (3) internship certificate; (4) conditional initial certificate; (5) transitional A certificate; (6) transitional B certificate; and (7) provisional and permanent certificates (http://schools.nyc.gov/TeachNYC/certification/ny.htm).

**Evaluating the Effectiveness of Various Teacher Preparation Models**

The Boyd et.al. (2008) review of the pathways into teaching in New York City, highlighted the features of these various programs and their results. The outcomes evaluated teacher preparation program completers and explored the following: where they teach, whether the stay in teaching, and what impact teachers have on student achievement. The researchers advocated that teacher background characteristics affect the selection of the pathways selected. They also suggested that, individual characteristics of teachers influence student outcomes, and pathways influence how teachers are matched to schools. (Boyd et.al., 2008a). Boyd, et.al.
concluded that the landscape is a full one with multiple pathways into teaching in New York City and a myriad of factors affecting outcomes for teachers and students. The state that, “complexity of the teaching demands, requires more sophisticated methods for understanding the relationships and interactions among the various factors (p. 165)”.

The second study of New York City teacher preparation, Boyd et al. (2008a), focused on “surveying the landscape” of teacher preparation, the collaborating educators reviewed alternative and traditional pathways to teaching in New York City and addressed the following three questions: “(1) What are the characteristics of individuals who enter different pathways to teaching in NYC schools?; (2) To what extent are pathways attracting different pools of candidates?; and (3) What structural features characterize the different pathways and programs that prepare teachers for NYC schools?” (p.5). The study concluded that the creation of varied pathways into teaching in New York City has brought a different pool of teachers to the city’s public school classrooms. However, despite the increase in the number of alternative route programs and the intense growth of the NYCTF program over the past years, there is no dramatic difference in the preparation of NYC teachers in alternative or traditional routes. The majority of alternative certification programs are housed in universities with traditional teacher preparation programs, and both pathways generally require much of the same coursework. There is no clear evidence of the restructuring of teacher education preparation programs, and the overall structure of education foundation courses, methods courses, content courses, and field experiences are similar across education institutions and pathways. The lack of differences in pathways for New York City teachers can be attributed to the standards set by New York State and professional education organizations. The deviation in both pathways arises in the pre-service fieldwork experience and the nature of preparation before becoming the teacher of record.
Variations in teacher preparation programs are evident in the sequence of the completion of education courses, the quality of the pre-service field experience, and the entry point of teacher candidates in the classroom. Since the variations in pathways to teaching in NYC is limited to entry points, Boyd, et al. (2008b) argue that, “the terminology of ‘early entry’ and ‘college-recommending’ better describe the kind of preparation teachers receive before beginning to teach or student teach” (p.7). The suggested terminology highlights the entry point of teacher candidates, not the route they completed, and provides a distinction between programs in which students begin full-time teaching before having completed all of their certification requirements and those that require student teaching after the majority of their preparation has been completed. The question raised is if alternative and traditional preparation programs are similar, how do we now create better teacher education programs that prepare teachers to enter classrooms and educate youth who will become active and productive participants in society?

**Teacher Candidates**

The majority of teacher candidates are graduates from the colleges of art and science and they are generally expected to have gained some habits of inquiry and critical thinking in their content and education courses. However, some teacher candidates and critics of teacher education believe that prospective teachers are exposed to weak uncritical ideas in educational theory (Sockett, 2008). This concept is supported by the Boyd et al. (2008a) high impact study which notes that, “more and more adjunct faculty are being hired, and the percentage of adjunct faculty is actually higher in NYC institutions than in national universities in which 47% of faculty were listed as adjunct instructors” (p. 25). This is an issue as adjunct faculty generally lack extensive elementary or secondary school classroom experience and often do not hold a PhD. Higher education institutions also offer various teacher education programs, and there is a
lack of consistency across universities on what departments and personnel are responsible for developing and maintaining the universities’ education programs. Even though most states now issue the same initial teaching certificate to completers of both routes and are mandated to submit program profiles to their selected accreditation organization (Feistritzer & Haar, 2008). A clear example of this is on the CUNY campuses that offer teacher education programs; some colleges have schools of education with a dean of education, and others have education programs that are organized by content area, and liberal arts and science faculty are in charge of the preparation programs.

Therefore, a myriad of teachers are trained who possess distinctive pedagogical styles, dispositions, and philosophies of teaching and learning based on the theoretical and conceptual framework of the recommending university/college’s teacher education program. International scholar and educator Hugh Sockett (2008) argues that teacher preparation programs should be more rigorous, more grounded philosophically, and more focused on the moral and epistemological underpinnings of the teaching profession. Sockett (2008) identifies and describes the four models of a teacher professional’s moral and epistemological stances:

a. The scholar-professional- the first model regards knowledge as the purpose of education, so that the teacher is dedicated to imparting wisdom and fostering the life of the mind

b. The nurturer-professional- …is primarily focused on the development of the individual. It describes a teacher whose primary focus is on the relationships with children

c. The clinician-professional- its epistemic character is a strong if guarded belief in the integrity of educational research as a social science with explicit
assumptions about knowledge, truth and belief, and the significance of the scientific method
d. The moral agent-professional- the fourth model accepts the legitimacy of the three conflicting educational purposes and regards none as having priority since its focus is on teaching as primarily, predominantly, and pervasively a moral activity (p. 49).

Teacher education programs do differ in the type of teachers they produce, but federal and state policymakers are applying pressure on higher education institutions to align their teacher preparation programs and to adhere to the stipulations of the NCLB act. Over the last decade, accrediting organizations such as CAEP, the Teacher Education Accreditation Council (TEAC) and other education constituents have pushed for the improvement of the professional quality of teacher education graduates. Educators believe that the pre-service education of prospective teachers sets the tone for the effectiveness of the teacher. In order to assess teacher effectiveness we must first identify the components of teacher pre-service education, and analyze program structures, subject specific teaching preparation, field experiences, preparation to work with learners, and preparation for diversity and urban settings (Boyd, et al., 2008 a). Little is understood about the links between pre-service education and teacher effectiveness, but society has clear ideas of what they expect educators of today to know in order to prepare youth for a rapidly changing world.

**Recommendations for Teacher Preparation Programs: What Teachers Should Know**

The debate surrounding what teachers should know before they enter the classroom is continuous, and each camp has ideologies of the skills teachers are expected to bring to the classroom. All constituents do agree that teachers should have some understanding of the
historical ramifications of education in the United States, including the role schooling has played in our society, state based curriculum, and the dynamic characteristics of their students. In addition to the knowledge of the content area they teach, teachers should possess pedagogical content knowledge and knowledge of the art and science of teaching (Goodlad, 2004). What research has found is that the quality of the participant’s clinical practice experience is dependent on the skills of the collaborating teacher. Student teaching on the traditional level or the clinical experience on the alternative pathway level can be a rewarding experience if the teacher candidate is paired with a supervising teacher who possesses and implements exemplary instructional skills and understands how to, and is willing to, share this knowledge with the prospective teacher. It is evident that in each pathway, some selected master teachers fail to exhibit model instructional skills and others that do, often do not have the skills to impart this information to an aspiring teacher (Hammerness & Reininger, 2008; Grossman & Loeb, 2008).

In creating ideal teacher preparation programs we should address the short summer pre-service assignment alternatively-certified teachers experience and their on-the-job training. Both pathways have coursework associated with their programs. All pre-service teacher education programs negotiate complex policy contexts with education constituents. States, which set requirements for certification, and national organizations that accredit teacher education, such as the CAEP and Teacher Education Accreditation Council (TEAC), are main players in these contexts, and depending on your perspective, the organizations either enable or constrain the work of teacher education. In addition to these formal policies, professional norms regarding what teachers should know and be able to do also shape the structure and content of teacher education. Such requirements and norms set the parameters for how programs prepare pre-
service teachers, whether these are college-recommending programs or early-entry programs (Boyd, et al., 2008b).

The majority of society as mentioned before agrees that students should be educated to be active participants in society. Society has changed, and to be active participants in our social and democratic world, the knowledge that students need to be equipped with has shifted. In order to achieve this we must begin to train teachers as agents of social change and teach them how to create democratic classrooms and teach for social justice (Michelli & Keiser, 2005). We have to develop teacher preparation that strays away from rote memorization and teaching towards the exam, through practice drills. We must help future educators realize the importance of understanding society, the structures within it and how to respond to social power (Lassonde, Michael, Rivera-Wilson, 2008). Teach them how to create democratic classrooms that foster the exploration of teaching & learning, and the role of education in society.

**Research on the Effectiveness of Different Teacher Preparation Models**

At the dawn of the 21st century, we should refrain from blaming various constituents and shift the focus to identifying the clear goals of transforming teacher preparation and creating innovative programs for supplying teachers for the nation’s public school classrooms (Angus, 2001). The preparation of teachers and teacher quality is also a national concern. From the initial report of the “A Nation at Risk” to the 2014 presidential State of the Union address, education is still on the forefront of the nation’s priorities. President Obama suggests that, “despite our historical failure to teach a global curriculum in America’s schools, our students are becoming cultural consumers” (p. 38).
Research on teacher preparation is generally limited to critiques of programs and pathways. There is currently no systematic, methodically reliable research or studies that identify the attributes of teacher preparation programs and pathways into teaching that improves student outcomes (Boyd, et al., 2008a). Teacher effectiveness is multidimensional, and assessing student outcomes is an arduous challenge. However, some researchers believe qualitative and quantitative data on the effectiveness of teachers from different pathways can help to improve state policies governing preparation requirements, the design of preparation programs, and school and district teacher selection and placement policies. The collection of such data will present some level of bias, as teachers can be effective at improving the learning of students in one area of the curriculum or another; they can be effective at promoting student self-esteem, motivation, or engagement. Distinguishing the contributions of a teacher from other factors such as home life, peers, school climate, and other additional influences, is complex. The next step in research is an analysis of traditional and alternative pathways to teaching in an attempt to align pathways to ensure that teacher candidates from both routes are exposed to the same experiences and fulfill similar requirements. Even with clear definitions of pathways and valid and reliable measures of student achievement, researchers must design their analyses carefully in order to avoid attributing to teachers and to their pathways what is actually the effect of other factors (Grossman & Loeb, 2008). One of the first and still the largest study to determine the qualities of programs was The Pathways Study which examined a single labor market—New York City—

As discussed previously, it is clear that participants of both pathways experience similar coursework, and the distinction in pathways is the critical pre-service fieldwork component. Alternate routes offer expedited experiences before entering the profession, but now how do we create mini pre-service experiences that replicate the skills acquired in traditional pre-service
field experiences, to achieve the goal of exposing all teacher candidates to key components of teaching and learning? How do we provide effective mentoring and continuous professional development for this population of leaders? Incorporating these features will ensure that programs are designed to produce prospective teachers who possess the set of knowledge skills, and dispositions that reflect the actual role of classroom teachers (Darling-Hammond, 2006). The collective data will provide a basis for the constituents responsible for teacher education to figure out how best to run both “traditional” and “alternative” programs within the same organizations, with the same faculty, within various educational institutions and with relatively limited resources (Boyd, et al., 2008a).

Conclusion

Teacher preparation has come to encompass an array of complex and pressing issues, including teacher recruitment, teacher qualifications, preparation programs and pathways, induction programs for new teachers, professional development, teachers’ working conditions, teacher assessment and effectiveness, practices regarding hiring and compensation, and the attrition and retention of the teacher workforce. However, both researchers and policymakers are often fixated on program level solutions to complex problems and invest large sums of money in comparing teacher preparation programs instead of funding research that attempts to understand the combination of characteristics from both pathways that cater to effective teaching (Grossman & Loeb, 2008). Fuller (2013) suggests that regardless of a researchers position on teacher preparation and outcomes in the classrooms, most scholars would agree that there is high quality research that explores the relationship between teacher preparation practices and program outcomes, but additional research that explores all aspects of teacher preparation and effects on student’s classroom performance, must be completed to make definitive conclusions about best
practices. Fuller (2013) advocates that organizations such as the National Council on Teacher Quality (NCTQ) that is pushing education reform, should invest in high quality research which explores linking inputs and processes with important outcomes, before evaluating and judging programs teacher preparation programs.

Therefore, a movement to raise the expectations for all teachers regardless of the route taken, and the creation of standards to ensure that all candidates entering the teaching profession are effective from day one is needed. This can only happen if research shifts its focus to the intricate characteristics of each pathway and the development of a model teacher preparation program for each pathway that combines all the identified factors. Pamela Grossman and Susan Loeb (2008), educational researchers who support the collaboration of alternative and traditional certification programs, suggest that in order to create effective teacher preparation programs, educational researchers and other constituents must come together, and “….attention must be paid to the multiple components of a teacher candidate’s path into the profession, along with an individualized and tailored program designed to address deficiencies in subject-matter knowledge, pedagogical skills, attitudes, and knowledge of teaching” (p. 97). This is a complex challenge and this study is a first step in analyzing teacher preparation in the CUNY system, NYC’s largest preparer of teacher candidates through both alternative and traditional teacher preparation programs.

Productive strategies for evaluating outcomes are becoming increasingly important for the improvement, and even the survival, of teacher education (Darling-Hammond, 2006).

The federal Higher Education Acts now requires that schools of education be evaluated based on graduates’ performance on licensing tests, and CAEP now requires that programs provide evidence of outcomes through collected data as they respond to each of the accreditation
standards (caepnet.org). Assessing teacher preparation programs is an imperative aspect of
teacher preparation and research, as before mentioned, emphasis is currently being placed on the
results of teacher preparation programs and the quality of teachers that are produced. Cochran-
Smith and Power’s (2010), have identified ten major trends in teacher preparation and the
analysis of teacher quality:

1. Linking teacher preparation, teacher quality and the economy – Based on national and
international assessments have identified that many U.S. students are not adequately
prepared, especially in math and the sciences. The bottom line is that the economic
prosperity of the United States depends on the ability of all its citizens to compete in the
knowledge economy which depends on teachers and schools.

2. Recognition of the teacher-Quality Gap- Which highlights the trend of schools with large
minority and socioeconomically disadvantaged students, who employee a higher
percentage of teachers who are less experienced, who are teaching out of license, and/ or
overall under qualified.

3. Accountability for student learning outcomes- teacher preparation programs are being
held accountable for student learning and have implemented various forms of evaluation.
Evaluation methodology consists of evaluating classroom added value passed on the
success rate of the teacher’s students on exams and continuous success of students.

4. Statewide data systems linking teachers, students and preparation- some states are now
developing statewide longitudinal data systems that link students’ test scores with data
about their teachers, including the institutions that prepared them.

5. More widespread performance assessments of teacher candidates- increasing the
complexity of pre-service teacher examinations
6. Proliferation of multiple routes into teaching – encourage the use of multiple pathways into teaching. Each state has some form of alternative certification teacher preparation program and they produce approximately 20% of the nation’s teachers (Feistritzer, 2008. This trend is also difficult to track due to the tremendous growth in so-called “alternate” programs, there is little agreement about the definition of the term (Humphrey & Wechsler, 2008.

7. School District-Based Teacher Residency Programs- In residency programs, teacher candidates complete a Master’s degree while working for a full year in a classroom alongside teacher mentors.

8. Practice as the center of teacher preparation- teacher preparation programs center programs around an emphasis on practice as the content of professional preparation.

9. Teachers as researchers- creating reflective teacher practitioners is the new phase as teachers need to gather, interpret, and use data about students’ learning and other aspects of teaching, learning, and schooling to continually rethink and improve their teaching practice.

10. Preparation to teach diverse learners- Many teacher preparation programs and pathways now focus their curriculum specifically on preparing teachers to meet the needs of these diverse learners.

11. Developing the quality of partnerships between teacher education programs and the schools in which students complete internships.

12. Extending authority to design teacher education to include faculty in education, faculty in arts and science, and faculty in K-12 schools.
As this literature depicts, there is still research that needs to be completed, to shape teacher preparation programs, to ensure quality program completers are entering public schools. This research is imperative, as educators are beginning to explore the impacts of the introduction of the Common Core Standards and new teacher certification examinations. Teacher preparation will continue to evolve as curriculum, technology and student populations change.
Chapter 3- Methodology

Introduction

The initial design of the research was created during the second year of the program, and was designed to analyze the Teacher Academy housed in the seven senior CUNY colleges from the acceptance of the first cohort of students to the first year of teaching in public school classrooms by program completers. This design was based upon the assumption that the program would be continued through individual campus specific support, after the initial three years of funding from the Milton and Carol Petrie Foundation. The goal was to view the characteristics of each accepted cohort of Teacher Academy students and monitor their experiences in every aspect of the program including but not limited to the following attributes: the admissions process, major coursework, Teacher Academy specific coursework (Learning to Learn, People of New York City and year-long research seminar), host school experiences, the initial certification process, job placement, first year experience of teaching, the value-added to their classroom, retention and attrition rates in the teaching profession after the contractual period. This holistic analysis of the program was an attempt to compare pathways to teacher certification for program completers versus students who completed traditional teacher preparation programs at each of the campuses where the Teacher Academy was housed. To determine how each route to teacher certification differed and to identify any variations in how prepared program-completers were to enter the classroom. My ultimate goal was to explore the added value that program completers brought to the classroom and to determine if Teacher Academy graduates were better prepared than individuals who entered the teaching profession through other pathways. In addition to assessing if graduates of the Teacher Academy completed the required two year commitment of teaching in high needs schools and if they remained in the teaching profession beyond the second year. A post-doctorate study was scheduled to assess the value added that these students
presented in classrooms and to correlate the early classroom entry point and host school effect on student achievement. However, due to the circumstances surrounding the closure of the program, the initial research framework was altered.

**Restatement of Research Questions**

The research questions and methodology were based on the collection of program-related documents, interviews, and surveys. Due to the aforementioned limitations, the research relied heavily on the analysis of collected documents through document analysis. As a research method, document analysis is particularly applicable to mixed-methods research and produces rich qualitative descriptions of a single phenomenon, event organization, or program. Bowen (2009) suggests that the rationale for document analysis lies in its role in methodical and data triangulation, the immense value of documents in case-study research, and its usefulness as a standalone method for specialized forms of qualitative research (p. 29).

To analyze the Teacher Academy and compare program characteristics to alternative and traditional teacher preparation programs, the research explores the three phases of the Teacher Academy: (1) the initial planning phase (2) the implementation phase and (3) the freeze of admissions phase. The following five research questions govern this study:

1. How did the profile/characteristics of Teacher Academy candidates differ from traditional and alternate teacher preparation programs?
2. How did the planned features and components of the Teacher Academy differ from and were similar to alternate and traditional teacher preparation programs? How do these features align with the presented conceptual frameworks of: constructivism, legitimate peripheral participation, and communities of practice?
3. How did the views of the various constituents (Petrie Foundation, CUNY Central, NYU, and DOE Partnership for Teacher Excellence) influence the three phases of the Teacher Academy (planning, implementation and closure phases)?

4. What were some of the ideological perspectives and underlying beliefs regarding the mission and purpose of the CUNY Teacher Academy? What were the lessons learned about implementing a new innovation?

5. How did the Teacher Academy semester-based seminars, fieldwork curriculum guide, and fieldwork experience influence students’ pedagogy, teaching style, disposition and philosophy of education?

Details regarding the relevance of these questions and how they shape the overall study were discussed in Chapter 1. Due to the numerous intrinsic and extrinsic factors influencing teacher preparation and the experience of Teacher Academy participants, the design of this study, is based on the categorizing of collected data based on the phases of the Teacher Academy (1) the planning phase (student selection criteria, host colleges, campus administration); (2) implementation of the Teacher Academy (program curricula, host school placements, assessment through the use of the Santa Cruz standards, curriculum projects); and (3) the phasing out of the program (decision to freeze admissions, the University Working Group on math and science education recommendations and the ARETE Consulting firm recommendation). The grouping of this data pulls together the various components of the Teacher Academy and allows for an analysis of each constituents’ role and influence of each phase.
Research Design

In order to examine the three phases of the Teacher Academy, I used a mixed methods approach. The study was conducted in three stages: the administration of a survey designed to yield qualitative data, followed by interviews with program completers and a key administrator, and a document analysis of collected program data centered on the characteristics of program participants. My use of a mixed method approach was based on the goal of obtaining both qualitative and quantitative data to analyze the various components of the Teacher Academy through more than one framework. Creswell (2013) states that mixed methods research “is an approach to inquiry involving collecting both quantitative and qualitative data…. the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach” (p.5). Picciano (2004) notes that in the mixed methods approach, “structured interviews are used to enhance the survey results and to provide a more complete description or picture...a combined approach might take advantage of the best aspects of the two (p. 28). Creswell (2013) classifies the mixed method approach as a pragmatic worldview where the “the researcher bases the inquiry on the assumption that collecting diverse types of data best provides a more complete understanding of a research problem than either quantitative or qualitative data alone” (p. 19); this study of the Teacher Academy uses surveys, interviews and collected documents to analyze the qualitative and quantitative aspects of the program and to review the characteristics of the Aspiring Teachers (TAs- Teacher Academy participants). Since the use of interviews was limited in this study, focused and open ended research questions were also used. Creswell (2013) references the value of interview research questions that are “open-ended, general, and focused on understanding the central phenomenon in the study” (p. 163). These guidelines were used in the creation of the questions that were used
in the survey to encourage survey participants to truly answer the question and provide supplemental information as needed. I used the protocol Creswell (2013) has outlined based on his years of studying the mixed methods approach: a) decide if a mixed methods study is viable, b) determine the justification of combining methods, c) plan the data gathering procedure(s), d) develop the questions, e) collect the data, f) analyze the data, and g) write the report accordingly.

In addition to using Bowen’s 2009, framework of document analysis which identifies the following five advantages of document analysis when used in a mixed methods approach:

1. Documents provide background information as well as historical insight therefore, providing a framework for researchers to understand the historical roots of specific issues and candidate the conditions that impinge upon the phenomena that is being researched.
2. The review of documents can suggest some questions that need to be asked and situations that need to be observed.
3. Documents provide supplementary research data.
4. Documents provide a means of tracking change and development. The researcher may also examine final reports to determine how an organization or a program evolved over time.
5. Documents can be analyzed as a way to verify findings to corroborate evidence from other sources (p.33).
Survey

Table 3.1

Protocol for Surveys

Step 1 An email was sent to two hundred and sixty six potential survey participants across the seven CUNY campuses (Brooklyn, Hunter, City, York, Lehman, Queens and the College of Staten Island) asking if they were willing to participate, with a letter attached detailing what would be involved in the interview. Individuals were asked to respond to this email if willing to be interviewed, and to include their name and their preferred email address.

Step 2 Each positive respondent to the email was emailed the IRB Consent Form, which they were asked to sign and return.

Step 3 After receiving all consent forms, an email with the Survey Monkey link was sent to the potential survey participants. All IRB consent forms were secured.

Step 4 After three weeks the survey link was disabled and all survey responses were transcribed for analysis.

Step 5 A reminder email was re-sent informing the potential survey participants that the survey was re-opened and encouraging them to complete the survey.

Seven open-ended questions were included in the survey to capture students’ experiences in the Teacher Academy. To protect the anonymity of survey participants I used an alphanumerical coding system known only to myself that identified each of the returned surveys. Emails were sent to the two hundred and sixty six participants across the seven campuses, who
were asked to complete the survey via Survey Monkey. They were informed that the survey was anonymous and results would be used to assist in my research.

The projected survey response goal was sixty to seventy-five participants, which represented each of the three cohorts of students enrolled at each of the seven CUNY campuses of the two hundred and sixty-six invited students, only seven survey responses were initially returned. Students were emailed a second time, in an attempt to secure additional responses and twenty students completed the survey the second time. In total twenty-seven program participants participated and completed the survey. It is possible that the low survey response rate was based on the fact that the survey was administrated after the freeze of admissions to the program across all CUNY campuses. It would have been ideal to determine why the remaining 90% of the Teacher Academy participants declined to participate in the survey. Table 3.2 depicts the demographics of the survey participants. The table provides representation of student responses from each cohort. As Table 3.2 indicates, the majority of the survey responses were returned from Cohort I and II students. Cohort III students were not highly represented in the survey responses.

Table 3.2

Survey Responses

<table>
<thead>
<tr>
<th>Teacher Academy</th>
<th>Cohort I</th>
<th>Cohort II</th>
<th>Cohort III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Participants</td>
<td>10</td>
<td>13</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 3.3 provides a representation of the declared majors and number of students in each major per cohort across all CUNY campuses, who were potential survey participants.
Table 3.3

*Teacher Academy students listed by Major*

<table>
<thead>
<tr>
<th>Teacher Academy Cohort</th>
<th>Biology Major</th>
<th>Chemistry Major</th>
<th>Earth Science Major</th>
<th>Math</th>
<th>Physics</th>
<th># of Aspiring Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>13</td>
<td>15</td>
<td>5</td>
<td>37</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Cohort 2</td>
<td>27</td>
<td>10</td>
<td>8</td>
<td>56</td>
<td>1</td>
<td>102</td>
</tr>
<tr>
<td>Cohort 3</td>
<td>29</td>
<td>5</td>
<td>9</td>
<td>51</td>
<td>0</td>
<td>94</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>69</strong></td>
<td><strong>30</strong></td>
<td><strong>22</strong></td>
<td><strong>144</strong></td>
<td><strong>1</strong></td>
<td><strong>266</strong></td>
</tr>
</tbody>
</table>

Table 3.4 provides a representation of the declared majors of survey participants. As Table 3.3 indicates, there was a clear disparity in declared science and mathematics majors. Approximately 54% of Teacher Academy students were pursuing degrees in mathematics. The one physics major, participated in the survey. However, the number of survey participants (Table 3.4) reflects the overall demographics of program participants. Although there was a limited number of survey responses the collected surveys reflected the profile of the students enrolled in the Teacher Academy across the CUNY campuses.
Table 3.4

Survey Participants by Major

<table>
<thead>
<tr>
<th>Teacher Academy Cohort</th>
<th>Biology Major</th>
<th>Chemistry Major</th>
<th>Earth Science Major</th>
<th>Math Major</th>
<th>Physics Major</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Participants</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 3.5 includes the research questions that were asked and how the questions were categorized according to themes and phases of the Teacher Academy.

Table 3.5

Teacher Academy Student Participant-Survey Questions

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>Themes &amp; Phases under Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe the type of teaching experience you had prior to entering the Teacher Academy?</td>
<td>Reason for choice of entry to the teaching profession (Planning Phase)</td>
</tr>
<tr>
<td></td>
<td>Current disposition regarding choice of profession (Implementation Phase)</td>
</tr>
<tr>
<td>2. Briefly describe your fieldwork experiences thus far (indicate what level you have observed, the activities you have participated in, etc.). In each answer please indicate the academic term the activities were completed in (ex. 2007-2008, 2008-2009. etc.)</td>
<td>The range of experiences in the classroom (Implementation Phase)</td>
</tr>
<tr>
<td>3. Identify the components of the Teacher Academy that you would: Keep, eliminate and/or modify</td>
<td>Program support, efficiency and gaps in provided services (Implementation Phase)</td>
</tr>
<tr>
<td>4. What influenced you to pursue a career in teaching? Does this continue to be your drive and motivation in completing your teacher preparation program (if not explain what</td>
<td>Perceptions about the teaching profession Current disposition regarding choice of profession (Implementation Phase)</td>
</tr>
</tbody>
</table>
changed and how your view/s of education have changed)?

<table>
<thead>
<tr>
<th>5. Briefly describe what you have learned about teaching and learning in your host school seminars.</th>
<th>Evaluation of newly introduced course and classroom (<em>Implementation Phase</em>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Briefly describe the professional teaching standards (Santa Cruz Teaching Standards) and how you have used them in your host school seminar and/or host school classrooms (If you are not familiar with the standards please indicate that in the available space).</td>
<td>Familiarity with the assessment tools used to measure their abilities (<em>Implementation Phase</em>)</td>
</tr>
<tr>
<td>7. How did the Teacher Academy administration support you in your pursuit in becoming a teacher? Identify the components that were useful and the areas of administration, which should have been strengthened.</td>
<td>Open-ended, opinion-based question about what participant believes about specific and overall aspects of the program (phasing out of program)</td>
</tr>
</tbody>
</table>
Table 3.6

Protocol for Interviews with Administrators and Program Completers

Step 1  An email was sent to each potential interviewee, asking if they were still willing to participate, with a letter attached detailing what would be involved in the interview. The selected population included program completers, Teacher Academy Directors and a CUNY central administrator.

Step 2  Each positive respondent to the email was emailed an IRB Consent Form, which they were asked to sign and return.

Step 3  When the participant returned the signed Consent Form, I emailed them request their availability to be interviewed and I set-up site visits or telephone interviews.

Step 4  On the specified date and time, each participant was called or visited; interviews were recorded using a recorder built into the interviewer’s phone. Following the interviews, each was transcribed for analysis.

Step 5  Each interviewee was emailed a thank you and they were reminded that if they wanted to review the research document, they could email the interviewer a request.

This protocol yielded a total of four participants; a Teacher Academy Director, two program completers and a former CUNY administrator. The interview questions that were used with each group of interviewees can be found in the appendix of this study. The potential interviewees were fifteen, including the following; nine campus Directors and six program completers. The immediate freeze in admissions to the Teacher Academy resulted in the reassignment of campus administrators, who declined to participate or were unable to commit to designated interview time. Program completers felt they did not have to adhere to the two-year required teaching requirement upon graduation. One of the program completers was not
teaching as stated in their Teacher Academy contract and was pursuing an additional degree. They expressed that there was no accountability due to the freeze in admissions and ultimate closing of the Teacher Academy, and their contract was null and void. Therefore, there was no need for them to adhere to the contract if no one was providing them with assistance with obtaining a placement in a school. This was definitely an issue due to the 2009 Department of Education hiring freeze, by former Chancellor Joel Klein, which prevented program completers from obtaining employment in New York City public schools.

**Document Collection**

To compliment interviews and survey responses, the researcher utilized collected program documentation to further analyze the Teacher Academy. The document analysis was completed through a thematic analysis, where the content of the documents were categorized based on themes. In their research, Fereday & Muir-Cochrane (2006) suggest that this form of pattern recognition, allows the researcher to take a closer look at the data and perform coding and category construction, based on the data’s characteristics, to uncover themes pertinent to a phenomenon. Bowen (2009) supports this form of document analysis, and suggests that the codes and themes the analysis generates allows the researcher to integrate data gathered by different methods. The gathered documents were coded based on the contained information, were categorized based on phase of the Teacher Academy that the information was pertinent and the underlying conceptual frameworks that were associated with the data presented in the document.
The following documents were analyzed:

Table 3.7

_Collected documents_

<table>
<thead>
<tr>
<th>Document/s</th>
<th>Phase of the Teacher Academy</th>
<th>Conceptual Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foundation Planning Documents</strong> - the original planning documents for the partnership, which includes expected goals, program development and sustainability</td>
<td>Planning phase</td>
<td>Legitimate peripheral participation</td>
</tr>
<tr>
<td><strong>Participant demographic file</strong> - high school attended, intended major, prior experience in education, SAT scores and high school CAA.</td>
<td>Implementation phase</td>
<td>Legitimate peripheral participation</td>
</tr>
<tr>
<td><strong>Notes from meetings</strong> - meetings notes from host liaison meetings, Teacher Academy Director meetings, curriculum project meetings, college specific meetings, and Teacher Academy planning meetings.</td>
<td>Implementation phase</td>
<td>Communities of practice</td>
</tr>
<tr>
<td><strong>University memos</strong> - collected memos from the university on Teacher Academy policies</td>
<td>Implementation phase &amp; Discontinuation phase</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Table 3.7 cont’d

<table>
<thead>
<tr>
<th>Document/s</th>
<th>Phase of the Teacher Academy</th>
<th>Conceptual Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The University Working Group</strong></td>
<td>Discontinuation phase</td>
<td>Communities of practice</td>
</tr>
<tr>
<td><strong>report on math and science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>education</strong> - a recommendation of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUNY constituents for best practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for math and science teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>preparation programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curriculum Project</strong></td>
<td>Implementation phase</td>
<td>Constructivism,</td>
</tr>
<tr>
<td><strong>Documentation</strong> - documents that</td>
<td></td>
<td>Communities of practice</td>
</tr>
<tr>
<td>track the planning and</td>
<td></td>
<td>&amp; Legitimate peripheral</td>
</tr>
<tr>
<td>implementation of curriculum projects</td>
<td></td>
<td>participation</td>
</tr>
<tr>
<td>which influenced changes in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>curriculum for Teacher Academy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>students and/or the general population</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Student coursework material-</strong></td>
<td>Implementation phase</td>
<td>Constructivism</td>
</tr>
<tr>
<td>course documentation which</td>
<td></td>
<td></td>
</tr>
<tr>
<td>highlighted changes to curriculum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>based on the curriculum projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and/or campus specific changes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3.7 cont’d

<table>
<thead>
<tr>
<th>Document/s</th>
<th>Phase of the Teacher Academy</th>
<th>Conceptual Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Santa Cruz professional standards documentation</strong> – the standards used by collaborating teachers and aspiring teachers in classrooms to determine the level of mastery of each of the required standards</td>
<td>Implementation phase</td>
<td>Constructivism &amp; Communities of practice</td>
</tr>
<tr>
<td><strong>The Teacher Academy: March 2009</strong></td>
<td>Discontinuation phase</td>
<td>Constructivism</td>
</tr>
<tr>
<td><strong>Survey Results summary &amp; final report</strong> - a survey of participating host school principals, host school liaisons, collaborating teachers and aspiring teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ARETE Consulting firm Program Evaluation</strong> - final evaluation of the Teacher Academy, which included an analysis of the CUNY and NYU collaboration</td>
<td>Discontinuation phase</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Definitions of Conceptual Frameworks

**Constructivism** - an epistemology, that focuses on learning or meaning-making theory that offers an explanation of the nature of knowledge and how human beings learn. It maintains that individuals create or construct their own new understandings or knowledge through the interaction of what they already know and believe and the ideas, events, and activities with which they come in contact (Fosnot, 2005).

**Legitimate Peripheral Participation** - a conceptual framework that provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artifacts, and communities of knowledge and practice. It suggests that a person’s intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in socio-cultural practices (Lave & Wenger, 1991).

**Communities of Practice** - are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. Communities of practice are developed through a variety of activities that are completed by a group of individuals in the same domain, within a community where they become practitioners (Lave & Wenger, 1991).

**Ethical Considerations and Conclusion**

The methodologies employed in this study were aligned with the required IRB standards and participants were assured protection of their confidentiality. All survey respondents received notification prior to survey administration of the nature of the study, how the findings would be used, and how confidentiality would be protected with their IRB consent forms. Surveys were coded to assure confidentiality of responses. In the interview phase, respondents signed a consent form and were verbally told that the responses were being recorded. Institutional Review Board guidelines were followed in all procedures and IRB permission was obtained for each component of the study.
Barriers in the Research

Founders of the Teacher Academy envisioned a program with longevity that admitted cohorts of three hundred students per year, across each participating campus. This number deviated from the original proposed three-hundred students per year across the seven CUNY campuses. The implementation of the program within each campus, was aligned with the following expected outcomes:

- A program which built relationships with local public schools that would hire graduates
- A program that campus based Schools of Education would be able to sustain with internal or grant funding
- A program which increased the number of STEM teacher preparation program completers
- A program which fostered modifications in Teacher Education curriculum which facilitated the modeling of best practices and pedagogy, outlined by the Council for the Accreditation of Educator Preparation (CAEP) standards: (1) content and pedagogical knowledge, (2) clinical partnership and practice, (3) candidate quality, recruitment, and selectivity and (4) program impact (http://caepnet.org/standards/standards/)
- A program that provided all constituents with the opportunity to provide insight in the development of teachers for the 21st century who would serve in high needs public schools

Due to the abrupt ending of the program only three cohorts of students were admitted to the program. Several campuses were awarded grant money from the National Science Foundation’s Robert NOYCE program, to provide support for the cohort of students remaining
in the program. This funding also allowed Schools of Education to support smaller scale Teacher Academy Programs on their campuses. City College and Lehman College, as of today, still receive funding from the NOYCE program to support teacher candidates. When admissions to the program was discontinued, funding for administrators was dissolved and each campus provided support for the remaining students either through the use of School of Education faculty or campus supported administrators. On some campuses, College Presidents converted and/or dissolved all Teacher Academy programs into other campus programs. Some feared that their campus would be penalized due to the then Interim Vice Chancellor Alexandra Logue’s influence on the closure of the Teacher Academy and College Presidents wanted to remain on CUNY’s good side with the change in administration. This in turn also led to former Teacher Academy administrators refraining from interviewing with me, regardless if they were to remain anonymous. One College President instructed staff not to mention the Teacher Academy and refer to the program as the NOYCE Scholars program. On many campuses any funding associated with the program and resources that were provide to these students, were revoked and all services and resources were obtained through each campuses’ School of Education. Therefore this hindered any administrative interviews that were initially scheduled. The lack of administrative interviews also led to the substantial reliance on program documents to analyze the various phases of the Teacher Academy.

Program participants across campuses were affected by the decision to stop admission into the program and the lack of administrative support, resulted in disgruntled students. Therefore, it was difficult to obtain survey responses and interviews, as some students felt abandoned and refused to participate as a result. Some also questioned, why was I conducting research on a failing program? Several students also declined to participate in interviews and
surveys as they felt that because there was no longer a Teacher Academy; their input in a survey would not make a change to the state of the Teacher Academy. Thanks to the students who supported my study and participated in my survey and interviews. Regardless of the small number of participants, their input helped shape my research. I was able to survey twenty-seven Teacher Academy students and interview two program graduates who entered the teaching profession. This was in addition to an interview with the former Vice Chancellor Dr. Selma Botman, who managed CUNY Central’s role in the Teacher Academy and Dr. Ed Crowe, one of the third party evaluators.
Chapter 4- Findings

Both quantitative and qualitative data were collected to explore the pre-service teacher preparation program. However, due to the premature dissolution of the program this research relied heavily on qualitative data. As mentioned in Chapter 3, the initial methodology for obtaining data was modified based on the status of the program and the ability to acquire information from former staff members, as a large percentage of staff members either resigned from CUNY or were instructed by their College’s Presidents not to discuss the state of the Teacher Academy on their campus. Therefore, the findings of this study are based on the review of program documents and limited interviews with various constituents of the Teacher Academy Program. The collected artifacts allowed me to analyze the various phases of the Teacher Academy and present the findings of the initial goal of the Teacher Academy, the pros and cons of the Teacher Academy, the reason why the program discontinued admission, and what aspects of the program should be included in both alternative and traditional preparation programs.

This chapter outlines several aspects of the Teacher Academy and an analysis of the collected data that are related to each element of the study. The components of the program that were explored based on the gathered documents and interviews, were the initial planning phase of the program (planning goals of all constituents and structure of the program); admission phase of the Teacher Academy (characteristics of accepted student); academic structure (curriculum, coursework and pedagogy); in-service component (host school and summer experience); evaluation of the program (third party-consulting firm and experience of various program constituents); and the decision to end the program (administrative decision to discontinue admission to the Teacher Academy, reaction of various constituents, sustainability plan by various campuses and the suggestions of the University Working Group).
Planning Phase of the Teacher Academy

The Teacher Academy was launched in 2006 as one of a number of City University of New York (CUNY) programs addressing the urgent need of New York City (NYC) public schools for high quality math and science teachers, especially in under-served public schools. These programs included CUNY’s Teaching Opportunity Program and the New York City Teaching Fellows program. CUNY and the DOE have a long standing relationship in preparing teachers. The Teacher Academy received generous support from a third-party private institution. The provided support enabled CUNY and New York University (NYU) to establish scholarships and stipends for all Aspiring Teachers (ATs), as well as conduct a wide array of planning and curriculum development activities, including partnering with the New York City Department of Education (DOE) in the selection of Host Schools and supporting major initiatives and changes in curricula on the campus level.

The Teacher Academy was implemented through the New York City Partnership for Teacher Excellence (PTE), a partnership with three large city, state and private institutions/agencies: DOE, CUNY and NYU. With major funding from the private agency- the Carroll and Milton Petrie Foundation, which was recognized by President Obama as one of the largest private donors in teacher education and reform (State of the Union address, 2014). The primary aim of the partnership was to significantly increase the number of highly effective teachers in the following shortage areas: mathematics, science and TESOL, entering the New York City public school system. There was no clear definition of highly effective teachers set by program. However, all constituents supported that highly effective teachers were teachers who completed extensive in-service hours, completed coursework with professors whose pedagogy were aligned with best teaching practices and completed a teacher preparation program with a
cohort of students majoring in similar disciplines (Fund for Public Schools, 2006). Selma Botman remarked that the Teacher Academy was, “created as a means to introduce highly trained teachers in high-needs schools”. The only CUNY campuses selected for the Teacher Academy, were CUNY campuses with Schools of Education. The selected senior campuses were Brooklyn College, City College, College of Staten Island, Hunter College, Lehman College, Queens College and York College. The CUNY campus programs focused on the preparation of teachers in mathematics and the sciences (Biology, Physics, Earth Science and Chemistry). NYU students were the only students enrolled in TESOL programs. In addition, only undergraduate students were admitted to the CUNY campuses and graduate students were admitted to the NYU program. Hunter College was the only CUNY campus which opted to have all admitted students complete a dual degree. The Teacher Academy was based on the following structure:
Three hundred new Aspiring Teachers were enrolled in the CUNY Teacher Academy and two hundred and eighty two graduate students were enrolled in the NYU Teacher Academy in the three years of the Partnership. This number was significantly lower on the CUNY campuses, where the projected number of program participants was nine hundred ATs. The NYU program met their target by enrolling two hundred and eighty two program participants, out of the
projected three hundred students. The CUNY campuses experienced difficulty recruiting students who were eager to begin a teaching career straight out of high school. The admission phase section of this chapter depicts the recruiting strategies that were used. The initial planning phase projected an enrollment of three hundred students per year across the CUNY campuses. The Petrie Foundation identified a set of key goals it hoped to achieve through the partnership. The goals included the following:

- **Goal 1- Expand the pool of teachers in shortage areas**- The anticipated number of CUNY completers was three hundred students per year after the four-year benchmark. The PTE dedicated a minimum of three years of funding for the Teacher Academy. Based on three years of the funded program and the projected three hundred program completers per year, an estimated nine-hundred students were expected to enter the teaching profession in high shortage areas. The NYU Teacher Academy met their targeted goal.

- **Goal 2-Positively impact host schools**- Improve student achievement, the educational environment and retention of high-quality teachers in host schools. It was expected that ATs would leave an impact on host schools by having CTs reinforce their pedagogically content knowledge and pedagogy by modeling for ATs. Through partnership funding, the goal of the Partnership was to provide funding for curriculum projects in an attempt to create curricular changes on the DOE and CUNY level.

- **Goal 3- Produce effective new teachers**- Produce graduates from CUNY and NYU Partnership programs who are able to perform effectively early on in raising student achievement and improving the overall learning environment in DOE high needs schools. Through the structured program and in-service component, the expectations of the Partnership was the introduction of three-hundred new highly effective teachers.

- **Goal 4- Improve teacher retention**- Provide pre-service teacher education and on-going in-service professional support that results in higher retention rates of new teachers in
DOE high needs schools and enables the new teachers to continue to grow stronger as professional educators. The expectation of the Partnership is to equip program completers with the tools to be successful and to remain in the teaching profession. The in-service component of the program was implemented to provide ATs with the opportunity to complete hands-on teaching earlier in their teacher preparation program. The goal was to provide earlier classroom experiences to ensure students were provided with realistic expectations and to provide them with the opportunity to gain access to invaluable classroom resources.

- **Goal 5- Impact teacher preparation beyond initial program**- The Teacher Academy model provides a replicable model that improves pre-service teacher education and in-service teacher support. In addition, to the development of initiatives in teacher preparation, that goes beyond the initial program design. The fifth goal is a culmination of the previous four goals and is based on the local and global impacts on the teacher profession and teacher certification programs. The goal was to make an impact beyond the DOE, CUNY and NYU.

In addition to the Partnership goals, the Teacher Academy program was committed to providing prospective students with:

- Four years of free tuition and fees (students in the Hunter College BA/MA program received five-years of funding), in addition to paid summer and after-school internships in return for a two-year commitment to teach in DOE high need schools. NYU students received two years of free tuition to complete their graduate studies.
- A challenging curriculum developed collaboratively by CUNY faculty and CTs that provides students with both a strong grounding in the liberal arts and a deep foundation in their major STEM field. NYU students followed their standard graduate teacher preparation curriculum.
The benefits of a “college within a college” learning environments, which included small classes, dedicated advisors and a Teacher Academy home base for studying and socializing.

Placements in selected middle or high school where, starting the summer prior to their freshmen year and continuing for four years, students will observe, study and eventually practice the profession of teaching. The high school or middle school becomes an extension of the classroom which the intention that when Teacher Academy program completers enter their classroom for the first time, it won’t be as strange and they will have tools and resources to be effective and successful classroom teachers.

The ultimate goal of the Teacher Academy was to provide an outlet for prospective teachers to participate in a supportive learning environment, where students were able to develop. Former CUNY Vice Chancellor, Dr. Selma Botman, who was the self-proclaimed Teacher Academy cheerleader, viewed the Teacher Academy, as the answer to addressing the shortage of teacher preparation completers in the STEM disciplines. The former Vice Chancellor, also indicated that the goal of the Teacher Academy was to provide students with a deep knowledge in math and science, an understanding of New York City public schools and the tools to succeed as classroom teachers (personal communication, 2011).

**Admission Phase of the Teacher Academy**

When students who were interested in the Teacher Academy completed CUNY’s undergraduate admission application, which was processed centrally through the University Application Processing Center for admission into the six CUNY schools they applied to, they also had the option to select up to three Teacher Academy campuses. Each CUNY campus had a supplemental application, which solicited information about each applicant’s experience with teacher preparation and asked for specific examples of interactions with youth (ex. camp
counselors, babysitter, tutor, etc.). The percentage of students who graduated from DOE schools and were admitted to the Teacher Academy, were aligned with the CUNY Admissions profile, 70% to 75% of accepted students are from DOE schools (http://www.cuny.edu/admissions/undergraduate/downloads/Admission-Profile-Freshman.pdf).

The 2006 CUNY inaugural class of the Teacher Academy did not meet the anticipated three hundred new Aspiring Teachers. As mentioned previously, the NYU Teacher Academy met their admission goal and enrolled 277 ATs.

To strengthen recruitment and to better advertise the Teacher Academy, CUNY developed an initial recruitment and admissions phase that was implemented in spring 2007 and was in place until the final year of admission to the Teacher Academy in 2009. The goal was to successfully recruit qualified applicants and increase the enrollment of admitted students, through a comprehensive, well-coordinated and efficient effort by CUNY and the DOE. The plan highlighting the actions taken by the various constituents responsible for recruitment and admission is depicted in the chart below:

Table 4.1

*Recruitment Plan and Strategies*

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>RECRUITMENT &amp; ADMISSION STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Office-Office of Academic Affairs</td>
<td>• The Office of Academic Affairs, in cooperation with the campus-based Teacher Academy Directors, surveyed students admitted for the fall of 2006 to identify the most effective means of publicizing the Teacher Academy among potential applicants.</td>
</tr>
</tbody>
</table>
The Office of Academic Affairs employed a full-time Director of Recruitment and Admissions Services who was responsible for organizing all OAA activities and coordinating with all University Offices and the seven participating campuses.

The Office of Academic Affairs published a Teacher Academy View Book; it produced 25,000 copies and, in cooperation with the Office of Admissions Services, distributed supplies to the following:

- Campus Admissions Offices
- Campus Teacher Academy Directors
- All NYC Public School College Advisors
- All NYC Non-Public School College Advisors
- Selected Metropolitan Area College Advisors

The Office of Academic Affairs, again in cooperation with the Office of Admissions Services, mailed an updated Teacher Academy brochure to individual twelfth graders who, according to information available from the College Board, appeared to meet the Teacher Academy eligibility criteria.

The Office of Academic Affairs responded to all expressions of interest from individuals receiving the brochure.
Table 4.1 cont’d

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>RECRUITMENT &amp; ADMISSION STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• The Office of Academic Affairs worked with the Office of Teaching and Learning and the Office of Youth Development and School-Community Services at the New York City Department of Education and developed a wide array of outreach efforts designed to insure that school staff, students and parents knew about the Teacher Academy and that appropriate students were encouraged to apply.</td>
</tr>
<tr>
<td></td>
<td>• The Office of Academic Affairs cooperated with the University’s Office of University Relations and developed and implemented a broad media effort that included print and electronic ads, as well as regular coverage by city-wide and local news media.</td>
</tr>
<tr>
<td></td>
<td>• The Office of Academic Affairs identified a select group of high schools as strategic recruitment sites and invited students from these schools to CUNY Open House events.</td>
</tr>
<tr>
<td></td>
<td>• The Office of Academic Affairs developed a database to keep track of applications and admissions activities.</td>
</tr>
<tr>
<td></td>
<td>• The Office of Academic Affairs conducted a central yield event to persuade students admitted to CUNY to enroll in the Teacher Academy.</td>
</tr>
</tbody>
</table>
Central Office - Office of Admissions Services

- The Office of Admissions Services designated staff members as Teacher Academy experts, and they were available to assist with recruitment activities in targeted schools.
- The Office of Admissions Services included information and presentations about the Teacher Academy in all of its regularly scheduled outreach activities for college advisors and high school applicants and parents (including its fall guidance counselor conferences).
- The Office of Admissions Services staff responded to all inquiries from college advisors and potential applicants and parents for information regarding the Teacher Academy.

Central Office - Office of University Relations

- The Office of University Relations developed and placed print and electronic ads for the Teacher Academy.
- The Office of University Relations, in cooperation with CUNY TV, produced a Teacher Academy segment for broadcast on its *Study with the Best* series and DVD copies of the segment for use in recruitment activities.
- The Office of University Relations included a Teacher Academy segment in its fall DVD mailing on CUNY’s “Decade of Science” to high school juniors and seniors.
Table 4.1 cont’d

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>RECRUITMENT &amp; ADMISSION STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Office-</td>
<td>• The CIS Office developed, implemented and maintained an on-line application system.</td>
</tr>
<tr>
<td>Office of Computer &amp;</td>
<td>• The CIS Office identified all program-related CIS issues and,</td>
</tr>
<tr>
<td>Information Services</td>
<td>in cooperation with the Office of Academic Affairs, developed all necessary policies and procedures</td>
</tr>
<tr>
<td>CUNY Campuses-</td>
<td>• The Office of Financial Aid, in cooperation with the Office of Academic Affairs, identified all program-related financial aid issues and developed all necessary policies and procedures.</td>
</tr>
<tr>
<td>Teacher Academy</td>
<td>• The Office of Financial Aid developed, implemented and maintained a financial aid system customized for the Teacher Academy program. Unfortunately, the system solely consisted of Excel spreadsheets that tracked tuition and stipend payments.</td>
</tr>
<tr>
<td></td>
<td>• The Teacher Academy programs, in cooperation with other campus staff, developed and maintained campus-specific Teacher Academy web pages that provided potential applicants and other interested parties with detailed information regarding the different programs of study and any special program features.</td>
</tr>
</tbody>
</table>
The Teacher Academy programs identified one or more currently enrolled students to serve as spokespersons for the Teacher Academy program. The selected students from each campus formed the Teacher Academy Ambassadors.

The Teacher Academy programs, in cooperation with the campus-based admissions offices, conducted a variety of special campus-based events for potential applicants and parents.

The admissions offices developed and implemented a campus-specific plan for recruitment of applicants to the Teacher Academy that was aligned with the college’s overall plan for the recruitment of highly qualified students and students interested in teacher education.

The campus-based admissions offices conducted a variety of special events for guidance counselors, potential applicants and parents to inform them of the Teacher Academy.

The admissions offices scheduled and conducted campus visits by potential applicants and parents.

The admissions offices followed up with all potential applicants by mail, phone and e-mail.

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>RECRUITMENT &amp; ADMISSION STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUNY Campuses-Admissions Offices</td>
<td>- The Teacher Academy programs identified one or more currently enrolled students to serve as spokespersons for the Teacher Academy program. The selected students from each campus formed the Teacher Academy Ambassadors.</td>
</tr>
<tr>
<td></td>
<td>- The Teacher Academy programs, in cooperation with the campus-based admissions offices, conducted a variety of special campus-based events for potential applicants and parents.</td>
</tr>
<tr>
<td></td>
<td>- The admissions offices developed and implemented a campus-specific plan for recruitment of applicants to the Teacher Academy that was aligned with the college’s overall plan for the recruitment of highly qualified students and students interested in teacher education.</td>
</tr>
<tr>
<td></td>
<td>- The campus-based admissions offices conducted a variety of special events for guidance counselors, potential applicants and parents to inform them of the Teacher Academy.</td>
</tr>
<tr>
<td></td>
<td>- The admissions offices scheduled and conducted campus visits by potential applicants and parents.</td>
</tr>
<tr>
<td></td>
<td>- The admissions offices followed up with all potential applicants by mail, phone and e-mail.</td>
</tr>
</tbody>
</table>
### OFFICE RECRUITMENT & ADMISSION STRATEGIES

- The admissions offices visited targeted high schools to speak to potential applicants in a variety of different contexts—college fairs, special Teacher Academy presentations, one-on-one conferences.

- The admissions offices organized a variety of activities intended to persuade admitted students to enroll (ex. presentations in first-year science & math courses to advertise the Teacher Academy, recruitment sessions by ATs in their former high schools, etc.)

<table>
<thead>
<tr>
<th>Department of Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The Department of Education included announcements of Teacher Academy recruitment activities in the Chancellor’s Principals’ Weekly Electronic Newsletter.</td>
</tr>
<tr>
<td>- The Department of Education identified high school principals, guidance counselors and parent coordinators for mailings and invitations to Teacher Academy information sessions.</td>
</tr>
<tr>
<td>- The Department of Education arranged for briefing meetings with key Central Office staff on Teacher Academy recruitment activities.</td>
</tr>
</tbody>
</table>
Table 4.1 cont’d

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>RECRUITMENT &amp; ADMISSION STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• The Department of Education arranged for Teacher Academy presentations at meetings of high school principals and guidance counselors.</td>
</tr>
</tbody>
</table>

(NYC Partnership for Teacher Excellence, 2006)

The basic admission criteria for all CUNY campuses was above the average criteria for general admissions within the math and sciences departments. The CUNY campuses required a minimum of an 80 College Admissions Average (CAA) and experience with education. The average CAA for the three cohorts of Teacher Academy students across the seven campuses was 87.4. The average mathematics and science averages within the three years of the admissions phase were 88.8 average (mathematics) and 86.7 (sciences) (CUNY Office of Institutional Research and Assessment, 2007). Three years after the last cohort of ATs were admitted, the mean Admissions CAA over the course of the program was higher than the Fall 2012 CUNY Admissions Profile of the seven participating CUNY campuses which reported a mean CAA of 87.0 (CUNY Office of Institutional Research and Assessment, 2012, http://www.cuny.edu/admissions/undergraduate/prepare/high-school-students/Admission-Profile-2012.pdf). The diagram below depicts an example of the characteristics of the accepted Teacher Academy participants across CUNY:
Admission into the Teacher Academy was not only based on quantitative admission criteria, it also relied on student’s experience(s) within the field of education. Approximately 80% of students indicated on their application that they had experience with tutoring and/or as a camp counselor. The remaining 20% of the ATs had experience babysitting and no formal tutoring experience. As the results depict, the teaching experiences students had prior to entering the Teacher Academy ranged from limited or no experience to various experiences, from peer tutoring to teaching Regents Exams preparation classes. Examples of the range of pre-Teacher Academy experiences include the following:
Applicant #1- Before the Teacher Academy I used to tutor in an afterschool program for elementary students and assisted one of my teachers with tutoring students for the AP Biology exam. I love tutoring and helping students understand the material like I do.

Applicant #2- I really don’t have any experience with tutoring or teaching. However, I have experience with babysitting over the past four years. I might not have extensive experience in education, but I love to learn and then it will be great to be a teacher. My mother was a teacher in China before she came to the United States. I remember playing teacher when I was much younger.

Applicant #3- Every summer I worked with underprivileged high school students and worked tutoring them in order to past science and math Regents exams after they completed summer school. It was difficult as these students did not want to spend their summer in school and being tutored by someone that was their age. However, it was a great feeling when the students who passed their Regents exams, were surprised, excited and thanked me for helping them.

Applicant #4- The only experience I have is watching my two younger siblings. I don’t know, but I like teaching. There is something about helping others that I really enjoy and want to do as a career.

Applicant #5- At Brooklyn Technical High School, I took advantage of the CUNY College Now Program. In the courses that I completed at the CUNY campuses, I always found myself staying after class and helping other College Now students. In one of my courses I actually formed and led a study group. Each week the group would review content that was presented in the class and discuss the outlines I had created for each of the chapters. I’m proud to say that each member of the student group actually passed the class. The feeling was phenomenal and I was so eager to help my fellow students. Teaching is an understatement and people do not realize that without great teachers, you wouldn’t have the great people of the world. Who would teach people how to read and explore cultures? Who would provide the foundation of the knowledge you would need just to make each day in society? I love teaching and I can’t wait to begin the Teacher Academy and I truly hope to make a difference in the lives of the world’s future. They say an apple a day keeps the doctor a way. But each classroom, each lesson, each day leads to a society that is educated and is equipped with the tools to make global change.
The pre-Teacher Academy experience of the accepted students varied, but there was continuity in their love for teaching. Each applicant expressed why they were interested in teaching and what made them passionate about the teaching profession. Each CUNY campus selected a heterogeneous group of students, with an array of experiences in the field of education. However, the common theme was the sense of a genuine passion for education. While the applicants were high school seniors at the time they submitted their application, but Teacher Academy Directors selected the students who presented sincere personal statements and strong academic backgrounds.

**Academic Structure of the Teacher Academy**

The projected goals set by the Partnership for Teacher Excellence, were the foundations for the academic structure of the program. These objectives led to the creation of teacher preparation programs that solely focused on Science, Technology, Engineering and Mathematics (STEM) disciplines. As a result, the coursework was particularly rigorous. The Teacher Academy program required 4-years of full-time enrollment, beginning in a pre-summer boot camp experience. The Hunter College Teacher Academy was the only CUNY campus, which required 5-years of full-time enrollment. Students were expected to graduate in four years while completing a summer program, internship, coursework and in-service requirements. All ATs were required to maintain a semester based and cumulative 3.0 GPA.

First year introductory science and mathematics courses are often defined as gatekeeper courses, and students who are interested in mathematics and/or science can gauge their success in the discipline based on their success in these courses. Often these 100-level courses are taught in larger classrooms, where the pedagogy is not aligned with the pedagogy of the incoming freshmen taking these courses, were accustom to in high school. As a result a large percentage of
intended math and science majors, fail these course and often declare a non-science and/or math major, after their first year of science and/or mathematics courses (Math & Science education curriculum project, 2010). This trend in the math and science introductory level courses was also evident within the CUNY Teacher Academy programs. In order for students to graduate within the four-years of provided program funding, students had to take a minimum of two major specific courses and five courses each semester to complete their degrees within the scheduled four years. Students who did not successfully complete their content coursework or general education requirements had an opportunity to take courses during the summer and winter quarters. However, required science and mathematics courses were often not offered during these semesters, especially courses that were scheduled to be taken in sequence, or have strict pre-requisite requirements. Hunter College, expressed to CUNY Central that this model was not beneficial to students and advocated for their Teacher Academy Program to be a five-year program for students to obtain a dual degree and have an extra year to spread out their coursework.

In evaluating the academic records of all Teacher Academy students across the seven campuses, there was a consensus that the academic structure of the Teacher Academy, had to be reviewed and revamped to ensure the success of students. Each of the participating CUNY campuses found that in the student’s first semester of coursework, students did not do as well as anticipated, although these students met similar academic profiles of students who were pursuing STEM majors. Even based on their higher CAAs, Regents and AP scores, ATs earned lower grades in their major courses, than other STEM students. Additional factors that added to the lack of student success, was that most campuses enrolled students in heavy course loads to ensure that they graduated in the required four-years, as the funding for the program was limited
to four years. This was definitely a course scheduling and coursework overload issue as these science and math students were expected to double up on major specific courses to ensure that they graduated within the allocated four year period.

On the first semester report of cohort I’s academic progress, each campus reported that students performed below average in their math and science courses. This resulted in each campus’ Teacher Academy administrators working with academic departments to develop retention strategies to ensure that students were successful (Teacher Academy Final Report, 2009). The Teacher Academy administration was advised to structure their academic plans, to allow students to complete courses in a sequence where they were not overwhelmed and over worked with coursework and other program requirements. Each Teacher Academy campus created tutorial opportunities for students and worked with faculty members whose pedagogy was aligned with the Santa Cruz Professional Standards. An example of the suggested model was developed at Hunter College. After careful review of the requirements for secondary education undergraduate degrees in Math, Physics, Earth Science, Biology and Chemistry, administrators realized that there was only a six-course difference of graduate courses in earning a dual degree. In collaboration with STEM academic chairs and faculty members, Hunter College developed a program to ensure that all students completed dual degree programs BA/MA, BS/MA, BS/MS or BA/MS within a five-year period. The table below depicts the coursework that students were expected to complete within five years. The six other participating CUNY campuses followed similar models, except for the graduate component of the Hunter model.

The schedule of classes, course titles, and quarter credit hours are highlighted in Table 4.2. Credits completed in each quarter are dependent on the student’s major. Science major students tended to take less classes, as science class credits ranged from 4- 5.5 credits and
required the completion of lecture, recitation and lab which included approximately seven to eight contact hours a week. All pre-service teachers completed field experiences on both the middle and high school level in urban high need schools (high-need schools were defined as schools where 70% of the population received free lunch).

Two unique courses were created for the program participants to enable students to identify and understand the connections among mathematics, science, research and pedagogy. The “Learning to Learn” course was team taught with a science professor and NYC public school teacher. Learning to Learn was designed to enable students to explore how they learn, and expose them to the philosophical underpinnings and pedagogical background of mathematics and science education, in the first step of fostering students’ development of their own philosophy of education and pedagogy. The “Host school internship and seminar” was taken for six consecutive quarters, students alternated each quarter in either a middle school or high school. The course was designed to provide students with the opportunity to discuss their host school experience in a safe environment and to provide them with weekly questions and frameworks to guide their host school observations. Students were encouraged to explore the teaching profession and develop questions that informed their practice. The course included a research component, where students posed questions about teacher education and completed research and observations to explore their topics. In the culminating projects, students presented their findings to their CTs and their college communities. The instructors of the course guided students’ research and presented them with resources and challenged them to incorporate supporting questions in their research. Some of the research questions explored, How do we alter classroom instruction for students with special needs?; How to engage students in mathematics?; How do you develop tool kits for teaching, with limited funding?; How are you able to teach freely and
still provide students with the foundation that they need to pass examinations?; and How do you manage students, without being mean? These example questions provided frameworks and informed the lens in which ATs used when entering their host school placements. The table below depicts the course sequencing and credit hours of participating ATs at the CUNY campus:

Table 4.2.

*Teacher Academy program structure (coursework and in-service component>*

<table>
<thead>
<tr>
<th>Teacher Academy Schedule, Courses and Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Summer</strong></td>
</tr>
<tr>
<td><strong>Year 1 Quarter- Science &amp; Math Boot Camp</strong></td>
</tr>
</tbody>
</table>

<p>| <strong>Year 1 Quarter- Science &amp; Math Boot Camp</strong>      |
| Science Course                                    |
| 3- 5 credits                                      |
| Math course                                       |
| 3 - 4 credits                                     |
| Summer school internship and mentorship           |
| Learning to Learning course                       |
| 3 credits                                         |
| Host School Internship                            |
| 1 credit                                          |
| experience and Research seminar                   |
| Intro-level content course                        |
| 3 – 5 credits                                     |
| General Education course(s)                       |
| 3 – 9 credits                                     |
| Learning to Learning course                       |
| 3 credits                                         |</p>
<table>
<thead>
<tr>
<th>Year 2</th>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spring Quarter</td>
<td>Host School Internship</td>
<td>1 credit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>experience and Research seminar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intro-level content course</td>
<td>3-5 credits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td>Second Summer – Optional</td>
<td>Major content area course</td>
<td>3 -5 credits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Education course</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td>Fall Quarter</td>
<td>Host School Internship</td>
<td>1 credit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>experience and Research seminar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd level course content</td>
<td>3 -5 credits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>School of Education courses</td>
<td>2 – 3 credits</td>
</tr>
<tr>
<td></td>
<td>Winter Quarter</td>
<td>Education Health Course</td>
<td>1 credit</td>
</tr>
<tr>
<td></td>
<td>Spring Quarter</td>
<td>Host School Internship</td>
<td>1 credit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experience and Research Seminar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd level content course</td>
<td>3 – 5 credits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>School of Education course</td>
<td>2 -3 credits</td>
</tr>
</tbody>
</table>
### Table 4:2 cont’d

**Teacher Academy Schedule, Courses and Credit Hours**

<table>
<thead>
<tr>
<th>Year 3</th>
<th>Third summer –</th>
<th>Major content area course</th>
<th>3 -5 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optional</strong></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Host School Internship experience and Research seminar</th>
<th>1 credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major content area courses</td>
<td>3 – 11 credits</td>
</tr>
<tr>
<td></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td>School of Education course</td>
<td>2 – 3 credits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th>Host School Internship experience and Research seminar</th>
<th>1 credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major content area courses</td>
<td>3 - 11 credits</td>
</tr>
<tr>
<td></td>
<td>General Education course(s)</td>
<td>3 - 9 credits</td>
</tr>
<tr>
<td></td>
<td>School of Education course</td>
<td>2 – 3 credits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4</th>
<th>Fourth summer–</th>
<th>Major content area course</th>
<th>3 – 5 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optional</strong></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
<td></td>
</tr>
</tbody>
</table>
Table 4:2 cont’d

<table>
<thead>
<tr>
<th>Teacher Academy Schedule, Courses and Credit Hours</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Major content area courses</th>
<th>3 - 11 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Education course(s)</td>
<td>3 - 9 credits</td>
</tr>
<tr>
<td></td>
<td>School of Education course</td>
<td>3 credits</td>
</tr>
<tr>
<td></td>
<td>with fieldwork</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th>Major content area courses</th>
<th>3 – 11 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td>School of Education student</td>
<td>5 credits – Hunter</td>
</tr>
<tr>
<td></td>
<td>teaching practicum</td>
<td>College students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(education course)</td>
</tr>
</tbody>
</table>

(Hunter BA/MA students completed a fifth year of study and earned a Master’s degree.

<table>
<thead>
<tr>
<th>Year 5</th>
<th>Fourth Summer - Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major content area course</td>
</tr>
<tr>
<td></td>
<td>General Education course(s)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Quarter</th>
<th>Major content area courses</th>
<th>3 11 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Education course(s)</td>
<td>3 – 9 credits</td>
</tr>
<tr>
<td></td>
<td>School of Education course</td>
<td>3 credits</td>
</tr>
<tr>
<td></td>
<td>with fieldwork</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th>School of Education student</th>
<th>5 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>teaching practicum</td>
<td></td>
</tr>
</tbody>
</table>
Outside of the coursework component, the pre-service summer experience and host school was also the major portion of the program. The host school element of the Teacher Academy will be further explored in the next section of this chapter. The Partnership initiated the summer in-service component as a way to build camaraderie with their cohort and to familiarize themselves with the college campus community. This was also an opportunity for students to have an informal orientation to college. The original pre-service summer experience included field trips, participation in summer tutorial programs and placement in a DOE school with summer school. After the first year of the academic review of the 2006 cohort of ATs, a boot camp math and science course that provided students with foundation courses to prepare them for the fall semester of coursework.

During the summer session, students visited various cultural institutions and were asked to create lesson plans based on their field trip. ATs also spent approximately 5-10 hours a week, working as tutors for high school students. At the end of each summer, all ATs were asked to reflect on their summer pre-service experiences. Their experiences were extremely positive and they definitely enjoyed the off campus excursions. The majority of the students felt the field-trips, coursework and tutoring experiences, truly prepared them for the fall semester and they didn’t mind spending their summer with their cohort members. A small percentage of students found the summer program to be too condensed and would have preferred to either take courses or tutor. The range of student feedback includes the following:
<table>
<thead>
<tr>
<th>Teacher Academy</th>
<th>Field Experience</th>
<th>Pre-service Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student</strong></td>
<td><strong>Respondent</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Field Experience</strong></td>
<td><strong>At the Darwin Exhibit there were not a lot of pictures of Charles Darwin himself. It was very hard for me to picture what he looked like. There was no information about his childhood and his family. It did not mention the types of books he liked to read. Also, it did not mention his political and religious views. I think it is very important to know it because his theories were very controversial. There have been many debates over his theories…</strong></td>
<td><strong>These past couple of weeks have been very interesting. I like my pre-calculus class (despite the three hours of homework every night) and am enjoying the discussions in ORSEM as well. Last week was the first week that we actually got to tutor students. I was working with two students, both very friendly and easy to connect with, but it was difficult to go over some material with them. I want to be a high school biology teacher, and this was my first real experience that it could be compared with. I'm glad that I'll be working with them, because I want to help them understand the material to pass the regents. The tutoring program really cares about these students, and cares about us as tutors as well. They wanted our opinions and our feedback. I don't feel lost in the crowd or forgotten, and I'm glad this program makes such an effort to give these students the same feeling. I feel lucky to be in such a program.</strong></td>
</tr>
<tr>
<td>Teacher Academy</td>
<td>Student Respondent</td>
<td>Field Experience</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>2</td>
<td>Response not provided.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Thanks to the Biology Professor that accompanied us to the museum, my experience at the Darwin exhibit was very informative. I wasn't sure how I would have reacted to this exhibit especially since I strongly believe that the earth and its inhabitants have a creator.</td>
<td>Response not provided.</td>
</tr>
</tbody>
</table>
To my surprise I actually enjoyed it. To ensure a great experience for anyone that visits the exhibit, I feel as though there should always be a guide available to thoroughly explain Darwin's theories and to tell little interesting tidbits about Darwin, just as the professor did. If it wasn't for the professor, I don’t think I would have really enjoyed myself. I also thought that the little documentaries throughout the exhibit were rather boring. Darwin was a great scientist and everyone should be grateful for his observations about the possible origin of all living things. Contrary to the actual purpose, Darwin's theories actually reconfirmed my belief in a wonderful creator. As I saw the details and intricacies of certain animals and the different variations among certain species, it strengthened my convictions that none of this could have possibly came about by chance.
Table 4. 3 cont’d

<table>
<thead>
<tr>
<th>Teacher Academy Student Respondent</th>
<th>Field Experience</th>
<th>Pre-service Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The summer session was a wonderful experience. I especially enjoyed the field trips (my favorite was the trip to Cold Springs Harbor) because it gave us a chance to get out of the building and enjoy the summer while participating in the program. The days were long, but not impossible… The classes were challenging, but not too difficult. I had a good experience with my professor, and I hope that future math students in the TA have an experience as good as mine. The ORSEM class designed exclusively for the purposes of the teacher academy made it a fun experience, and I really learned about myself and education.</td>
<td>The tutoring program was a wonderful program to help high school students, and it really was an enjoyable experience. The agenda of the program is a good one, and the people working with it were all extremely nice and accommodating to the teacher academy students. I enjoyed the Teacher Academy reception at the graduate center, and was honored that I was asked to make a speech…I have been expecting a tough transition into college starting at the beginning of my freshman year of high school. The teacher academy faculty has made this transition as easy as possible, and for that I am thankful…</td>
</tr>
<tr>
<td>Teacher Academy Student Respondent</td>
<td>Field Experience</td>
<td>Pre-service Experience</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>I think that considering the amount of time the faculty of the Teacher Academy was given, a fantastic program was created. I understand the pressure I’m sure you were under to create it, so I must say that I am truly happy with the program. The only qualm I had was with the MSP schedule conflicting with the teacher academy program. I understand the need there was for the MSP. I love the program, I love the school, and I love the profession. What more can I say? …</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Some of the field trips were interesting, but they were too long and tiring. It had nothing to do with Mathematics, so I felt like it did not help me at all… The tutoring went well because every day we would concentrate on a certain topic and review it with the students.</td>
<td>The classes were not too hard. It was really laid-back. The tutoring program was not bad at all. I enjoyed working with the students. But I did not like the fact that it was right after class every day. Also I did not like some of the tutors in the program.</td>
</tr>
</tbody>
</table>
Table 4.3 cont’d

<table>
<thead>
<tr>
<th>Teacher Academy</th>
<th>Student Respondent</th>
<th>Field Experience</th>
<th>Pre-service Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fresh kills wasn't that in sighting as compared to the long island cold spring harbor because it was outdoor and we actually learned some new things about genomes and trout. In addition, since it was outdoors, it made the trip more interesting.</td>
<td>6</td>
<td>Although some of the trips were fun, for me as a math major it was pretty unnecessary, because I could not really see the importance of some of them, and could not relate every trip to my major. One thing that was wrong about the tutoring program is that the fact that I was not with the kids in the morning, I did not really know the content of the material that was going to be taught in the afternoon, which prevented me to start off tutoring with my full potential. The good thing about the tutoring is that it helped me evaluate my potentials as a teacher, not only in the material that I tutored but also in the way I interacted with my student being a positive role model.</td>
</tr>
</tbody>
</table>
### In-Service component of the Teacher Academy - Host School

The Partnership designed the Teacher Academy surrounding an early in-service component, where participating students completed a host school experience beginning in their

<table>
<thead>
<tr>
<th>Teacher Academy Student Respondent</th>
<th>Field Experience</th>
<th>Pre-service Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>The field trips were cool, especially the Cold Springs Harbor. I really enjoyed coming to school this summer. The program is definitely fulfilling my goals as a college student as well as a person. I met great friends and still hope to meet more! I hope I continue to succeed and better myself as a student and person along with the people I encounter as well.</td>
<td>The summer tutoring program together was a little bit hectic. The overall schedule was planned out well, however, it was a bit overwhelming but competitive and I think that was the intention. Other than that, everything was fine. I think next year for the incoming freshman you can add an education course and maybe do tutoring the following summer.</td>
</tr>
<tr>
<td>8</td>
<td>Over the summer I thought there were a lot of good things about the Teacher Academy. The one thing that I enjoyed the most was the weekly trips. I found the trips to be fun and informative.</td>
<td>The tutoring program was also a fun program and a great way to introduce us to teaching. I felt that I really made connections with my students and helped as much as possible.</td>
</tr>
</tbody>
</table>
first semester and continued each year throughout their duration in the program. This imperative component of the program, was carefully planned in collaboration with the following constituents, Host School Principals; Teacher Academy Directors and Associate Directors; Collaborating Teachers; DOE; the Partnership; Host School Liaisons; and the Aspiring Teachers. The host school model was intended to provide a substantively different experience for pre-service teachers and to create a deeper and more nuanced relationship between school-based practitioners and college faculty. The work of the ATs in host schools was a defining characteristic of the Teacher Academy and the Partnership emphasized the most important factor, is that the prospective teachers will have spent 1,000 or more hours in real-life school settings before they enter their first classrooms as teachers of record. Throughout the duration of the Teacher Academy, the foundation supported the belief that extensive practice in school settings was essential for the preparation of effective teachers. However, they did express that they also knew that practice has to be carefully designed and supported, in order to yield the highly effective teachers the program anticipated on completing the Teacher Academy (The New York City Partnership for Teacher Excellence, 2006).

The Teacher Academy’s host school model was grounded in the belief that it was essential to acknowledge and utilize the experience and expertise of practicing teachers for the preparation of new teachers and that these practitioners played a key role in organizing the work of the Teacher Academy students in their classrooms and the larger school environment and by participating in the overall development of new teachers as partners with the college faculty. Because of this belief, the traditional model for the involvement of public schools and their staffs in the preparation of teachers was deemed to be inadequate for the Teacher Academy. The table below depicts the program characteristics of the Teacher Academy, the current NYC alternative
teacher preparation programs and the traditional teacher preparation programs in the seven
CUNY campuses which housed Teacher Academy programs.

Table 4.4

*Characteristics of Teacher Preparation Programs in New York City*

<table>
<thead>
<tr>
<th>Program Characteristics</th>
<th>Teacher Academy</th>
<th>NYC Alternative Certification Programs</th>
<th>CUNY Traditional Certification Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Criteria</td>
<td>Minimum CAA of 80</td>
<td>• Prospective applicants must have a minimum of a Bachelor’s degree prior to applying.</td>
<td>Undergraduate: Minimum GPA of 2.75</td>
</tr>
<tr>
<td></td>
<td>Minimum SAT- 1000</td>
<td></td>
<td>Minimum number of liberal arts courses-21</td>
</tr>
<tr>
<td>Essay</td>
<td>Essay</td>
<td></td>
<td>Minimum numbers of completed credits-45</td>
</tr>
<tr>
<td>Experience with adolescents</td>
<td>GPA ranging from 2.5-4.0</td>
<td>Have experience in education or another profession.</td>
<td>Graduate: Bachelor’s degree</td>
</tr>
<tr>
<td>Point of Entry</td>
<td>Undergraduate: Freshmen year, first semester admitted into the Teacher Academy</td>
<td>There are currently nine alternative routes to teacher certification in New York City: (1) NYC</td>
<td>Undergraduate: Junior year</td>
</tr>
<tr>
<td></td>
<td>Graduate:</td>
<td></td>
<td>Graduate: first semester admitted into the program</td>
</tr>
<tr>
<td>Program Characteristics</td>
<td>Teacher Academy Certification Programs</td>
<td>NYC Alternative Certification Programs</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Teaching Collaborative; (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York Teaching Fellows; (3) Teach for America; (4) New Visions for Public Schools- Hunter College Urban Teacher Residency/ Math and Science; (5) I-START Urban Teacher Residency Program; (6) Teaching Residents at Teachers College; (7) Math for America fellowship Program; (8) Peace Corps Fellows Program; and (9) American Museum of Natural History-Master of Arts in Teaching Urban Residency Program, are all graduate level programs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Characteristics</td>
<td>Teacher Academy</td>
<td>NYC Alternative Certification Programs</td>
<td>CUNY Traditional Certification Programs</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>In-Service Experience</td>
<td>Teacher Academy students began their in-service experience the summer prior to their first semester in college (straight out of high-school). Students completed in-service requirements every semester. The goal was to have students complete at least 1,000 hours in classrooms.</td>
<td>Each alternative certification program, except for the New York City Teaching Fellows who begin their in-service requirement during the first semester of the program.</td>
<td>In-service hours are required for some education courses (each CUNY campus has a minimum of two education courses which require a minimum of 36-hours of in-service work. Program participants complete 100 hours of in-service work during their senior year when they complete their student-teaching practicum.</td>
</tr>
</tbody>
</table>

Program participants during the summer session prior to their first fall semester. |
<table>
<thead>
<tr>
<th>Program Characteristics</th>
<th>Teacher Academy</th>
<th>NYC Alternative Certification Programs</th>
<th>CUNY Traditional Certification Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification</td>
<td>Each CUNY campus was scheduled to nominate program completers for initial certification.</td>
<td>Each program assists students in obtaining transitional licensure.</td>
<td>Each CUNY campus nominates program completers for initial certification.</td>
</tr>
<tr>
<td>Program Incentives</td>
<td>Free tuition</td>
<td>Free tuition</td>
<td>Some CUNY teacher preparation programs</td>
</tr>
<tr>
<td></td>
<td>Stipend</td>
<td>Stipends (ex. Math for America Fellows can earn up to $100,000 in addition to a teaching salary)</td>
<td>provide scholarships for high achieving students (ex. NOYCE Scholars program at City College &amp; Lehman College).</td>
</tr>
<tr>
<td></td>
<td>Tutoring</td>
<td>America Fellows can earn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teacher Academy community space</td>
<td>up to $100,000 in addition to a teaching salary)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loan Forgiveness</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mentoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Placement</td>
<td>The program planned to place program completers in the selected host schools.</td>
<td>Program participants are placed in schools by the alternative certification program.</td>
<td>CUNY campuses provide program participants with access to DOE vacancies and talent search events.</td>
</tr>
</tbody>
</table>

Sources ([http://schools.nyc.gov/TeachNYC/certification/alternatives.htm](http://schools.nyc.gov/TeachNYC/certification/alternatives.htm).
The traditional model is characterized by the selection of a teacher by a principal within a school who agrees to serve as a cooperating teacher for a student teacher who will be placed in his or her classroom for a period of time as the student teacher nears the end of his or her college coursework. For the most part, the student teacher had limited contact with other teachers in the school building besides the assigned cooperating teacher. The traditional model of teacher preparation the Partnership referred to, was the model of teacher candidates having their first in-service experience during their last semester in their student teaching practicum course. As a result, he/she may never have the opportunity to see his/her cooperating teacher interacting with colleagues, parents, or school leaders. In this model, the student teacher may never understand how the larger school community impacts the classroom of the cooperating teacher. Because the entire host school took on the responsibility for the development of the Aspiring Teachers, Teacher Academy students had numerous opportunities to observe and be fully involved in the many different ways in which schools functioned and they learned from all of those experiences (The New York City Partnership for Teacher Excellence, 2006).

Typically, a student teacher works with a student teaching practicum teacher for approximately 150 hours and, in New York State, completes two lesson plans and teaching assignments prior to graduation and certification. In contrast, Teacher Academy students spent approximately 600 hours in their host schools, completed teaching more than twenty full lessons and three research projects on teacher education before graduation. Teacher Academy students typically spent one day a week in their host schools.

The Partnership expressed that it was the frequent case that the kinds of teaching experiences that a student teacher will have are idiosyncratic and largely dependent on the preferences of the cooperating teacher rather than on a shared understanding among cooperating
teacher, college faculty, college field staff and student teacher regarding which experiences are most valuable. The Teacher Academy fieldwork was created, designed and implemented on the basis of a shared adoption of the Professional Teaching Standards and the Continuum of Teacher Development as the framework for thinking about the elements of effective teaching and for assessing the development of ATs. From the beginning, the Teacher Academy adopted both the Professional Teaching Standards and Continuum of Teacher Development, developed by the New Teacher Center at the University of California, Santa Cruz, as its framework for describing the development of in-service teachers. Since that time, both documents have significantly influenced the thinking about the characteristics of effective teaching practice and the developmental path along which a teacher may travel across her or his career.

The Partnership developed a student teaching continuum to address the framework for accessing the host school experience. After several weeks of working with host school liaisons and CTs, The Teacher Academy Continuum of Teacher Development was developed. While the NTC Continuum focused on the professional growth of in-service teachers, the Teacher Academy Continuum of Teacher Development included both a pre-service and an in-service stage. The Teacher Academy Continuum of Teacher Development described the developmental levels of Teacher Academy students from Aspiring Teacher to student teacher and ultimately on to emerging teacher, a level at which was anticipated that all Teacher Academy students would achieve, upon beginning their careers as teachers-of-record in their own secondary math and science classrooms. The intention of the Partnership, was that the Teacher Academy Continuum of Teacher Development served as a guide for all Teacher Academy participants—Aspiring Teachers, Collaborating Teachers, liaisons, and CUNY faculty—in the discussions and assessment of the development of Aspiring Teachers into practicing teachers. However, due to
the abrupt closure of the Teacher Academy, this was an intended goal that was not measurable due to the lack of collected data.

Additional characteristics unique to the Teacher Academy were the selection of the host school placements for ATs. CUNY campuses solicited participation from local schools or schools in which they had relationships with and the schools were approved by the DOE. The criteria for selected host schools were high need schools where the percentage of free/reduced lunch recipients was higher than 70%. The lunch form requests parents to provide economic information and the application is not a required form. Therefore, the percentage of free/reduced lunch percentages was not accurate. The DOE was adamant about CUNY campuses using high need schools and CUNY campuses that requested the use of host schools that did not fit this category were asked to justify the use of the school. The exceptions approved were host schools that had prior relationships with CUNY campuses (ex. Host school affiliated with the CUNY campus, School of Education student teaching placements, host schools supported by the CUNY campus President, etc.).

Based on the data collected by the Partnership, and in comparison to NYU host schools, where 100% of the selected host schools were high needs schools, 34% of the twenty-six selected CUNY host schools were not deemed as high needs. The Partnership was not supportive of the decision to use the selected schools and challenged the placement of ATs in these schools. Teacher Academy Directors, expressed their concern with only placing students in high need schools, and felt that the host schools their campus identified would provide students with ideal experiences. One Teacher Academy Director conveyed that, “ATs should have the opportunity to observe in various schools and not only high need schools. Why is it that our students do not have the opportunity to observe in successful schools? They should be able to
observe the various facets of NYC public schools” (Teacher Academy Director). To advocate for selecting additional non high need schools as host schools, Teacher Academy Directors and CUNY campus college administrators (Provost, Presidents, and/or Deans) presented rationales to use prospective host schools. The table below depicts the characteristics of the schools that were used by the CUNY campuses. As the table indicates, the schools used as a host school by each CUNY campus varied widely and as discussed previously, were selected based on their affiliations with the individual campuses and proximity to the CUNY campuses.

Table 4.5

*Characteristics of Teacher Academy host schools*

<table>
<thead>
<tr>
<th>School</th>
<th>Enrollment</th>
<th>% Free Lunch</th>
<th>% Black &amp; Hispanic</th>
<th>Grad Rate '04</th>
<th>L1 &amp; L2 ELA</th>
<th>L1 &amp; L2 Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunter College</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronx Ac of Letters</td>
<td>229</td>
<td>24%</td>
<td>94%</td>
<td>3%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Manhattan Hunter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Science</td>
<td>320</td>
<td>61%</td>
<td>63%</td>
<td>21%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fashion Industries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>1,659</td>
<td>68%</td>
<td>89%</td>
<td>3%</td>
<td>78%</td>
<td>N/A</td>
</tr>
<tr>
<td>Lincoln Academy/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostos</td>
<td>525</td>
<td>65%</td>
<td>93%</td>
<td>6%</td>
<td>87%</td>
<td>N/A</td>
</tr>
<tr>
<td>School</td>
<td>Enrollment</td>
<td>% Free Lunch</td>
<td>% Black &amp; Hispanic</td>
<td>% Asian</td>
<td>Grad Rate '04</td>
<td>L1 &amp; L2 ELA</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>------------</td>
<td>--------------</td>
<td>--------------------</td>
<td>--------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Young Women’s Leadership</td>
<td>418</td>
<td>73%</td>
<td>97%</td>
<td>1%</td>
<td>98%</td>
<td>20%</td>
</tr>
<tr>
<td>Manhattan East (MS 224)</td>
<td>271</td>
<td>51%</td>
<td>69%</td>
<td>6%</td>
<td>99%</td>
<td>12%</td>
</tr>
<tr>
<td>Lehman College</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronx Early College Academy</td>
<td>513</td>
<td>42%</td>
<td>41%</td>
<td>13%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Marie Curie School for Med &amp; Nursing</td>
<td>410</td>
<td>86%</td>
<td>95%</td>
<td>1%</td>
<td>N/A</td>
<td>48%</td>
</tr>
<tr>
<td>Brooklyn College</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS 68</td>
<td>1,166</td>
<td>68%</td>
<td>97%</td>
<td>1%</td>
<td>N/A</td>
<td>66%</td>
</tr>
<tr>
<td>JHS 088 Peter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Rouget (MS 88)</td>
<td>940</td>
<td>70%</td>
<td>78%</td>
<td>13%</td>
<td>62%</td>
<td>69%</td>
</tr>
<tr>
<td>Brooklyn College</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academy</td>
<td>556</td>
<td>33%</td>
<td>92%</td>
<td>1%</td>
<td>75%</td>
<td>37%</td>
</tr>
<tr>
<td>PS 235 Lenox</td>
<td>1,528</td>
<td>50%</td>
<td>98%</td>
<td>1%</td>
<td>N/A</td>
<td>16%</td>
</tr>
</tbody>
</table>
Table 4.5 cont’d

<table>
<thead>
<tr>
<th>School</th>
<th>Enrollment</th>
<th>% Free Lunch</th>
<th>% Black &amp; Asian</th>
<th>% Hispanic</th>
<th>Grad '04</th>
<th>L1 &amp; L2 ELA</th>
<th>L1 &amp; L2 Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Carroll School (Math &amp; Expl.)</td>
<td>330</td>
<td>44%</td>
<td>69%</td>
<td>7%</td>
<td>N/A</td>
<td>32%</td>
<td>44%</td>
</tr>
<tr>
<td>Brooklyn College Academy</td>
<td>256</td>
<td>53%</td>
<td>92%</td>
<td>1%</td>
<td>N/A</td>
<td>48%</td>
<td>45%</td>
</tr>
<tr>
<td>Midwood High School</td>
<td>3,764</td>
<td>21%</td>
<td>50%</td>
<td>22%</td>
<td>92%</td>
<td>12%</td>
<td>14%</td>
</tr>
<tr>
<td>Queens College</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louis Armstrong Mid. School</td>
<td>1,526</td>
<td>46%</td>
<td>50%</td>
<td>17%</td>
<td>N/A</td>
<td>29%</td>
<td>34%</td>
</tr>
<tr>
<td>IS 093</td>
<td>1,426</td>
<td>78%</td>
<td>70%</td>
<td>8%</td>
<td>N/A</td>
<td>57%</td>
<td>58%</td>
</tr>
<tr>
<td>Queens School for Inquiry</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Bayside</td>
<td>3,623</td>
<td>24%</td>
<td>39%</td>
<td>39%</td>
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<td>% Asian</td>
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<td>L1 &amp; L2 Math</td>
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<td>Curtis High School</td>
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The CUNY campuses reinforced the use of *The Teacher Academy Continuum of Teacher Development*, the Santa Cruz Professional Teaching Standards and the Teacher Academy host school fieldwork guide to facilitate the host school experience for ATs, CTs and Host School Liaisons. CTs were also asked to assess their ATs and provide feedback of ATs progress to the Host School Liaisons. In the weekly host school experiences ATs reported that they completed the following activities with their CTS: observed the classroom; planned a lesson with a CT, assisted their CT, worked one-on-one with a student; worked with small groups of students; assessed student work; visited other classrooms outside of their discipline; participated in host school CT meetings; team taught a lesson; conducted a whole class meeting; met with guidance counselors/social workers; attended faculty meetings; participated in curriculum writing; met with parents; and met with parent coordinators (Evaluation of Partnership for Teacher Excellence, 2009). The list of activities exhausts all of the types of possible interactions that students could have encountered in the host school placements through the duration of the program. In some cases students did report that they were limited to observing the class only. In these instances the host school liaisons, intervened and worked with the CT to develop activities to broaden the classroom experience of the AT. The 2009 Teacher Academy: March 2009 Survey Results Summary & Final Report provides examples of ATs experiences at their host schools:

Survey Responses

- I think the program should have a better relationship within the host schools. Sometimes it seems like teachers don’t know who we are and more accepting to students from other schools. We should be able to have more in-depth learning experience than just seminars and observations. We should either be assigned to a particular teacher and follow them for most of the day and not be restricted to the days and times that are scheduled.
• Host school experiences should be several times a week, this will help ATs be well aware of the lessons taught in their classrooms.

• I think the Teacher Academy should start allowing us to do other things in the school besides just observing and teaching within the classroom. It would be nice to see the other things that are offered to students.

• My host school experience is great. I have the opportunity to work with students and I’m leading a science project on the solar system in my class.

There were an array of host school experiences reported by the ATs and the completed tasks varied based on the host school and the CUNY campuses. Within the twenty-six participating host schools, there were also various levels of experience and comfort level with the Teacher Academy students. Host School Administrators selected CTs based on the Teacher Academy goals and the availability of classes that were aligned with the discipline of the ATs. Often there was difficulty with arranging observations. However, ATs coordinated with their CTs to arrange mutual in-service times. Some ATs also spent additional hours in their host schools, especially prior to Regents examinations, to assist with preparing students for examinations. CTs who hosted ATs were compensated with a three-credit graduate or undergraduate course at the CUNY campus their ATs attended.

In evaluating the host school experience after the first year of the Program (2006-2007), in the New York City Partnership for Teacher Excellence’s 2007 Progress Report, program evaluators stated, “We are pleased to report that our work over the last year has resulted in a qualitatively different environment of design and support in our host schools and we are confident that the results of the comprehensive evaluation we are now conducting will convincingly demonstrate that our Aspiring Teachers are developing the skills and knowledge
they need to be successful teachers”. The goals of the host school experience were reportedly aligned with the intent of the host school experience.

Evaluation of the Program

To assess the viability of the Teacher Academy, an external and internal review of the program was conducted. The evaluations of the facets of the Teacher Academy were conducted by CUNY and the ARETE Consulting firm, and focused on evaluating the original goals defined by the Partnership.

- **Goal 1- Expand the pool of teachers in shortage areas-**

  The seven participating CUNY senior colleges tripled the number of undergraduates in their math and science education programs. In addition some campuses created programs to address students who were admitted. For an example, Hunter College implemented a state approved Earth Science and Physics BS/MA teacher certification program, to accommodate the Earth Science and Physics intended majors they admitted. The Teacher Academy candidates approximately doubled the number of mathematics and science teacher candidates across the seven CUNY campuses. As NYU was solely a graduate program, they reported 31 Partnership program completers graduated and 29 of these students were employed in high needs schools. At the time of the decision to end admission into the program, 266 ATs were enrolled across the seven CUNY campuses. Of the 266 ATs, approximately 85% of the students were on track to graduate within the allotted four years (five years Hunter college students). The number of ATs scheduled to graduate and enter the teaching profession was significantly lower than the Partnership’s projected goal of 300 new ATs per semester on CUNY campuses.
The number of participating students was 70% lower than the anticipated three year goal of 900 participating ATs set by the Partnership.

The decision to discontinue admission into the Teacher Academy prior to the first cohort of students graduating from the CUNY campuses, made it impossible to enforce the two-year commitment for program completers to complete a minimum of two-years in a high needs school, especially, since students were promised assistance with placement. In informal updates of ATs, students who remained at and graduated from one of the CUNY campuses reported the following fields of employment or academic pursuits; enrolled in a graduate program; pursuing a doctorate; teaching in a middle school; teaching in a high school; adjunct on a CUNY campus; unemployed and mentoring students. The lack of Teacher Academy administration on the CUNY campuses resulted in a loss of imperative data on the ATs. These students became statistics for individual campus’ School of Education profiles.

• **Goal 2-Postively impact host schools**-

The evaluators used qualitative measures to address the positive impact on host schools based on interviews and surveys of host school teachers and principals. Of the twenty-six participating host schools, 50% of the host school principals responded to the CUNY 2009 final survey. The host school principals reported the Teacher Academy to have a positive impact on several different areas in their schools. The top three areas noted were benefits to students in the host school (different teaching styles, additional resources, attention, etc.), enhanced collaboration with the CUNY campuses, and building a strong pipeline for future teachers. Host school principals also reported an overall 80% moderate or significant impact of the Teacher Academy in their host school
in the following areas: student learning and achievement, level of in-school collaboration, level of staff effectiveness and staff development opportunities. One respondent indicated that, “my teachers have found a level of leadership and embraced mentorship, which has increased their best practices.”

A total of 67 CTs from the host schools completed the CUNY 2009 final survey. The survey findings indicated that CTs were satisfied with the commitment of the ATs and provided all students with the opportunity to observe students and/or work with students directly in the classroom. Additional opportunities that CTs provided for ATs were assessing student work, leading the whole class in a lesson or discussion, organizing materials for class, and co-teaching/team teaching with collaborating teachers. Each participating CT was responsible for supervising two ATs in weekly classroom visits. Approximately 8% of the CTs did indicate that they only provided their ATs with opportunities to observe only and not work directly with students. The final survey highlighted the impact of ATs in CTs’ classrooms, 92% of the CTs agreed that ATs, “provided additional attention for pupils (individual student instruction, more adult instruction, more adult interaction, small group instruction, etc.)”. The surveyed CTs expressed their knowledge of their role in the ATs host school experience, the Professional Teaching Standards, and the Teacher Academy Fieldwork Guide. The CTs identified their major responsibilities in the program was to work with and mentor ATs; play a key role in developing activities that ATs worked on in the classroom; assess the development of ATs; collaborate with CUNY liaisons and/or Teacher Academy Director to support ATs; and collaborate with their school colleagues to support ATs. The negative aspects of the program reported by the CTs was the lack of knowledge of the
overall structure of the Teacher Academy and a disconnect with the host school seminar that was held on the CUNY campuses and ATs host school classroom experiences. CTs requested participation in the host school seminar and a few recommended CUNY campus visits to meet ATs in their own environments.

The ultimate goal of enhancing instruction and students’ achievement on standardize exams, was not measured, due to the conclusion of the Teacher Academy program. However, as the qualitative data depicts there was a positive impact on the host schools by the Teacher Academy program.

- **Goal 3- Produce effective new teachers**- The goal was to measure teacher effectiveness based on the extended review of student achievement in classrooms and on standardized exams. As well as exploring the value added that program completers bring to the classroom. However, this goal was never accessed due to the closure of the program. In addition, I was unable to access the graduates of the program as they did not receive the full support of the program. The two graduates who I interviewed were an insufficient pool to access this goal.

- **Goal 4- Improve teacher retention**- This goal was not measured as we were unable to locate all of the program completers. In addition, due to the early closure of the program all completers did not adhere to the contract of working in a school for two years after the completion of the program. Several students have reported that they have not pursued a job in teacher education, one is attending medical school, and three students are in doctoral programs and others have reported that they could not find a job in the DOE.

- **Goal 5- Impact teacher preparation beyond initial program**- In the three years of the program there was insufficient data to measure this goal. However, there were minimal
CUNY campus based initiatives which impacted campus based teacher preparation programs. The Partnership supported curriculum projects on each of the seven CUNY campuses and these projects focused on changing the curriculum on the college level and building collaborations between the CUNY campuses and host schools. Over the three years of the curriculum project initiative, $915,972 was expended on host school grants by the partnerships and funded nineteen curriculum projects (ARETE evaluation report, 2009). The projects were implemented at the CUNY campuses, and involved the creation of new or revised coursework at the college/graduate school level to better present subject content or pedagogy, and attempted to address a broad range of other issue involved in preparing more effective middle and high school teachers. Several of the projects were implemented long-term on the campuses and others were designed specifically for the ATs.

**Decision to End the Teacher Academy**

* NYU was able to sustain their Teacher Academy program without the Partnership’s support. However, NYU did not opt to fund the Teacher Academy, as they received funding for several other teacher preparation programs.*

We know that at least several campuses have been seeking their own external funds to support their Teacher Academy programs, and we trust that such efforts will continue…I can affirm that the Central Office will again next year ensure coverage of 80% of tuition, all student stipends, and central administrative support for the Teacher Academy. Based on enrollment projections, the Central Office would then be responsible for the majority of Teacher Academy costs (roughly $1.5 million), with the remaining costs (for campus
planning/administration, 20% of tuition, and campus host school liaisons), spread among the 10 Teacher Academy campuses. The Teacher Academy’s next phase will build on the finding and recommendations of the report of the University Group on Math and Science Teacher Preparation at CUNY.

(Alexandra Logue, 2009 Memo, pg.1).

After the resignations of Dr. Selma Botman, former Executive Vice Chancellor and University Provost, and John Garvey, The Teacher Academy Director, an Interim Executive Vice Chancellor and University Provost, Alexandra Logue was appointed. In the first few months in her position Executive Vice Chancellor Logue, reviewed the Teacher Academy implementation phase outlined by her predecessor Dr. Selma Botman. In August 2008, former Vice Chancellor Logue called for the convening of a University Working Group (WG). The goal of the WG was to develop recommendations for the University Chancellor regarding options for preparing high quality math and science teachers, including appropriate modifications to the Teacher Academy. The development of the group was followed by the hiring of a new Director of the Teacher Academy Maura Donnelly. The Teacher Academy CUNY Central administration at the time of the formation of the working group, were unfamiliar with the original goals of the Partnership and were unable to successfully advocate for the continuation of the program and provide data for the WG to support the projected outcomes of the Teacher Academy.

The University Working Group on Math and Science Teacher Preparation included several Deans and Associate Deans of CUNY Schools of Education and CUNY Central Teacher Academy Staff. The Group was formed to review the options for preparing the high quality math and science teachers needed in New York City public schools, incorporating appropriate modifications to the Teacher Academy. To accomplish this goal, the WG was charged with...
comparing and contrasting different teacher preparation options, taking stock of lessons learned from the Teacher Academy, and assessing the impact of the current Teacher Academy partnership with the New York City Department of Education and New York University. CUNY leaders began a complete review of the Teacher Academy and other math and science teacher preparation programs in the University. The University Working Group on Math and Science Teacher Preparation at CUNY’s report, issued in February 2009, recommended that the Teacher Academy be modified and made various recommendations about principles to consider and incorporate the University’s teacher preparation programs going forward.

Based on the recommendations of the University Working Group, the Teacher Academy froze admissions as of fall 2009, until the program was fully reviewed. Vice Chancellor Logue, issued the first correspondence to Teacher Academy Directors on May 12, 2009. The goal of the letter was to ensure all remaining constituents that CUNY Central would honor all promises to students and campuses without any interruption. CUNY Central clearly was waiting for the promise of continued funding from the Petrie Foundation after the three years of promised funding ended. CUNY committed itself to covering the costs associated with the waiving of tuition and fees for the Teacher Academy students, as well as covering some additional administrative costs. However, in August 2008, CUNY faced significant City and State budget reductions and the likelihood of further fiscal restraints. It became evident that the projected costs of the current Teacher Academy model in its more fully implemented form were prohibitive.

Vice Chancellor Logue confirmed that the next phase of the Teacher Academy was dependent on outsource funding, “we await information from the Petrie Foundation about funding for next year. We are also working in collaboration with Brooklyn, Hunter, and Lehman
College to seek funding through a Teacher Quality Partnership grant” (Logue memo 05/12/09). In the event that the Petrie Foundation failed to provide support for the Teacher Academy, CUNY Central clearly reiterated that they would not renege on their contractual agreement with students and, “will continue to cover 80% of student’s tuition, all student stipends, and CUNY Central administrative support.” The continued funding for the Teacher Academy was estimated at $1.5 million, where the 10 Teacher Academy programs were responsible for the remaining 20% of student’s tuition, and administrative duties. Dr. Botman in her interview explained that the Teacher Academy did not have the required support form CUNY Central to be successful. Dr. Botman confirmed that, “she was the cheerleader for the Teacher Academy, and she felt that the program was the solution to ending the shortage of math and science educators” (personal communication, 2012). The livelihood of the Teacher Academy was distinctly dependent on additional funding of the Petrie Foundation, “The Teacher Academy’s next phase would build on the findings and recommendations of the report of the University’s Working Group on Math and Science Teacher Preparation at CUNY” (Logue memo 05/12/09). She ends her memo with recommending a strong research component to continue to learn about best practices for training teachers and retaining them in NYC public schools and ensured Teacher Academy Directors that, “teacher education is one of CUNY’s most important responsibilities and the preparation of highly qualified math and science teachers remains a priority.” ARETE Evaluator, Dr. Ed Crowe, agreed that additional research was required to learn about best practices in teacher preparation, and indicated that, “it takes longer than three years to evaluate the outcomes of such innovations, it usually takes about five years to determine the success of a program” (personal communication, 2012).
Acquiring sustainability was the largest factor that led to the closure of the Teacher Academy. CUNY concluded, in the summer of 2008, that the costs of the Teacher Academy were unsustainable, and announced a pause on the recruitment and admission of further Teacher Academy students. The Petrie Foundation committed to three full years of funding with the anticipation that CUNY and NYU campuses would be able to support full Teacher Academy programs. The Petrie Foundation placed an emphasis on solicited funding and sustainability of CUNY campus based programs, as CUNY is a public institution, securing funding is often a challenge. CUNY committed to, “developing a plan by Sept. 1, 2008 to ensure sustainability of Partnership programs beyond the end of the grant period through partner commitment to self-fund and/or raise additional outside funding” (NYC Partnership for Teacher Excellence, 2007, p. 18). Funding was essential to supporting aspects of the program that were viewed as imperative to the program. Dr. Crowe, a program evaluator identify the following components of the Teacher Academy that were ideal, “(1) cohort model, (2) promising students- based on admissions criteria, (3) diverse group of program participants, (4) identifying with a group of students versus one of a few hundred students in a teacher preparation program, (5) exposure to coursework related to the teaching profession, and (6) an immediate experience in a public school (personal communication, 2012). During this time CUNY proposed funding from the following sources, “UTEACH proposal, Deutsche Bank Foundations proposal and the Wachovia Foundation proposal” (NYC Partnership for Teacher Excellence, 2007, p. 18). This was in addition to the commitment to develop a long term economic model and funding strategy. CUNY also explored how the Teacher Academy could be replicated or adapted for other teacher education programs through the Teaching Fellows Program.
The second component that led to the decision to end the program was the DOE dissatisfaction with the program and the lack of continuity of the program goals across the CUNY campuses. The ARETE report, that DOE administrators argued that, “implementation varies considerably across institutions, with the implication that the varying quality and depth of implementation will affect where the Partnership goals will be reached and whether there will be improvement in the quantity and quality of math and science teachers, feeling that the number of ATs …is not high enough to meet the needs of the DOE.” Dr. Crowe indicated in his interview that there was a clear lack of continuity across the CUNY campuses and stated, “some campuses all wanted the money that came with the program and didn’t want to do the work to run a successful program. In addition, some CUNY campuses did not have strong advocates that supported the campus program and were able to voice the needs of the program.” As a result, in spring 2009 all of the CUNY campuses dissolved their Teacher Academy programs, and students received minimal support at the conclusion of the program. In 2012, the Teacher Academy was officially phased out and a new program similar to the initial program has not been implemented. However, many CUNY campuses were awarded Robert Noyce grants from the National Science Foundation and this provided program funding for continuing Teacher Academy candidates.
Table 4.6

*Conceptual framework & findings*

<table>
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<th>Conceptual Framework</th>
<th>Findings</th>
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| Communities of practice | • The Teacher Academy was created as a cohort model. Where students were admitted as a cohort, completed courses as a cohort and completed activities as a cohort. Students utilized a common community space and worked collaboratively in host schools and summer experiences.
  • In the host school seminars each cohort member shared their host school experience and resources they used in their classroom
  • Specific courses were created solely for Teacher Academy students |
| Constructivism | • The Teacher Academy was designed to ensure that students were able to construct their own knowledge through host school experiences, host school seminars, coursework, in-service experiences and community activities
  • A Learning to Learn course was developed for students to explore how they learn and understand. In addition, to exploring how others learn |
Table 4.6 cont’d

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<td>• Each semester was designed to provide students with the opportunity to construct their understanding of teaching and learning, through interactions with their cohort and in the classroom</td>
</tr>
<tr>
<td></td>
<td>• ATs compiled artifacts for a portfolio depicted what they learned in their courses and in-service experiences and how each of these experiences shaped their knowledge of teaching and learning</td>
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<td>Legitimate peripheral participation</td>
<td>• TA student cohorts interacted with each other and they shared their experiences with each of the new cohort of students</td>
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<td>• Each semester, all cohorts met at least twice as a group</td>
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<td>• ATs worked with novice, veteran teachers and various cohort members during their host school experiences</td>
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<tr>
<td></td>
<td>• All cohorts utilized common community spaces</td>
</tr>
<tr>
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<td>• Each cohort was involved in tutoring other cohort members</td>
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<td>• ATs created social media sites and communicated with ATs across the seven campuses</td>
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Based on this study, the question that remains is what components of traditional teacher preparation programs and alternative teacher certification programs, such as the Teacher Academy, are needed to develop to create a teacher certification program that produces highly effective teachers that are prepared to enter high needs schools within shortage areas?
Chapter 5- Conclusion

Restatement of the Research Questions

This study explored teacher preparation in New York City and the pathways leading to teacher certification, through the review of the Teacher Academy. The research questions that governed this student were:

1. How did the profile/characteristics of Teacher Academy candidates differ from traditional and alternate teacher preparation programs?

2. How did the planned features and components of the Teacher Academy differ from and were similar to alternate and traditional teacher preparation programs? How do these features align with the presented conceptual frameworks of: constructivism, legitimate peripheral participation, and communities of practice?

3. How did the views of the various constituents (Petrie Foundation, CUNY Central, NYU, and DOE Partnership for Teacher Excellence) influence the three phases of the Teacher Academy (planning, implementation and closure phases)?

4. What were some of the ideological perspectives and underlying beliefs regarding the mission and purpose of the CUNY Teacher Academy? What were the lessons learned about implementing a new innovation?

5. How did the Teacher Academy semester-based seminars, fieldwork curriculum guide, and fieldwork experience influence students’ pedagogy, teaching style, disposition and philosophy of education?

In analyzing the presented research questions, I was able evaluate teacher preparation programs in New York City, to review the various phases of the Teacher Academy and make recommendations for teacher preparation programs.
Review of the Teacher Academy

In reviewing the planning documents of the program and through interviews, it was clear that some of the underlying beliefs and ideological perspectives of the program constituents was to create a program that pushed teacher preparation in New York City to another level where a larger percentage of mathematics, science and TESOL (NYU only) teacher candidates were prepared to enter high needs classrooms. The goal of the Partnership was to encourage the partnering colleges to think about and reflect on how they prepare teachers, and what could be done more efficiently, especially on the CUNY campuses. The plan for the program was to have identical programs implemented across the seven CUNY campuses; where curriculum, in-service experiences and cohort activities were aligned. The NYU Teacher Academy was solely a graduate level program that mirrored the standard teacher preparation mathematics, science and TESOL programs that were in place on the campus.

In the planning phase of the Teacher Academy, the disparity in how each of the CUNY campuses structured their programs was clear. Some campuses relied on their existing staff and did not hire additional staff to assist with the administration of the program. Whereas other campuses created positions for existing staff (ex. release time for faculty members) and hired new staff members as needed. The advocates and support on each campus also varied. Dr. Crowe suggested that, “various CUNY campuses had strong advocates to support their program and others did not” (personal communication, 2012). The CUNY campuses with strong advocates were the campuses where the program was a priority and there was buy in to support the program by key campus constituents. On other campuses where support and strong advocates were absent, the agreed-upon goals and outlined components of the program were not implemented. These campuses experienced resentment from the Partnership and encountered
issues with recruitment and implementing the program, because of the lack of campus advocacy. The level of support that was provided from the administration on each CUNY campus became evident during the implementation phase of the Teacher Academy.

The implementation phase of the Teacher Academy on the NYU campus was aligned with their traditional graduate level teacher preparation program. The CUNY campus implementation of the Teacher Academy was unlike their traditional teacher preparation programs. The CUNY Teacher Academy according to ARETE evaluator, Dr. Crowe, “raised the expectations for faculty and this was uncomfortable for staff members, especially since they were required to do more” (personal communication, 2012). The implementation phase of the program included extensive in-service hours, the modification of curricula and the use of the cohort model. School of Education faculty and administrators were essential to making the program work and their input in developing the program was required to implement the unique components of the Teacher Academy. Campuses where education faculty and administrators were not on board are the programs that did not achieve the goals outlined by the Partnership. These components of the Teacher Academy were new to the colleges, and mandated compotation form various campus constituents.

The in-service component and early entry point to Schools of Education were the key components of the Teacher Academy that required additional support and funding. The in-service semester based observations equated to the hiring of staff to monitor students in classrooms for more than 1,000 hours of in-service experiences. The early entry point into the School of Education, forced CUNY to rethink the design and sequencing of their education curricula, to ensure that students completed an education course each semester, and that the courses allowed students to reflect on their in-service experiences. The CUNY campuses that
were successful in recruiting and facilitating the goals of the partnership, were those with strong advocates who made the program a priority. Dr. Crowe explained that, “on some CUNY campuses the Teacher Academy was not a priority and it was a shame. Some CUNY campuses were not following along with the trends in teacher education and failed to successfully implement the various components of the Teacher Academy” (personal communication, 2012). CUNY central was behind the program, as long as the individual CUNY campuses were able to sustain to the program.

The decision to discontinue the Teacher Academy at NYU did not affect their teacher preparation programs. However, the decision to end the Teacher Academy at CUNY was devastating to their campus teacher preparation programs. As mentioned in Chapter 4, the CUNY Teacher Academy increased and, in some cases, doubled the number of teacher candidates in mathematics and science teacher preparation programs. If the program was sustainable and continued in CUNY, then the program would have reached its goal of graduating a significant number of science and mathematics teacher candidates to enter high needs schools. The program was abruptly discontinued and the program outcomes were not assessed accordingly. However, through the analysis of the program and teacher preparation programs, attributes of teacher preparation that should be incorporated in all teacher preparation programs could be identified.

Recommendations

As mentioned in Chapter 1, teacher preparation in New York City is continuously evolving, and teacher preparation programs are being reviewed based on their ability to reform, align their programs with city and state political mandates and create highly qualified teachers
(as defined by the state). This has resulted in tension between decision makers, professional educators and parents. In Michelli and Earley’s (2011) chapter on *Teacher Education Policy Context*, they emphasize that there is concern, “over what constitutes an excellent teacher and how individuals are prepared to meet that standard. At the same time federal laws and new expectations for federal discretionary grants have pressured state agencies to change teacher licensure and program approval policies to respond to federal mandate and challenges” (p. 1). There appears to no connection between the expectations of government officials and what is supported and implemented in teacher preparation programs.

With the new education initiatives that have and are scheduled to be adopted by New York City, there is a need to identify what it takes to prepare teachers to enter high need schools. I advocate that the following characteristics of teacher preparation programs that should be incorporated into teacher preparation programs are the following:

- Early in-service experiences (teacher candidates first in-service experiences should not be during their last semester student teaching practicum course).
- Cohort models-teacher candidates should be accepted in cohort models where teacher candidates can identify with a group of students and are not lost amongst the hundredths or thousandths of students on their campus.
- NYC teacher preparation programs should focus on building relationships with DOE schools. With these partnerships, teacher candidates will have direct access to employment opportunities. In addition, DOE administrators would have knowledge of what teacher candidates are taught in their programs and how their preparation is aligned with the goals of their school.
- Professional Development should be provided for CTs to ensure that they can connect the dots, and are aware of the curriculum and licensure expectations of the ATs in the classrooms.
- Teacher candidates should participate in out of classroom excursions that support the teaching profession. Teaching does not only occur in the classroom, and external experiences provide opportunities for teacher candidates to relate their classroom experiences with real world experiences.
- Teacher preparation programs should provide candidates with support resources (ex. tutoring, campus community space, workshops, etc.).

These components are suggestions of features that are ideal for teacher preparation programs and should be considered when creating and/or restructuring teacher preparation programs.

**Final Thoughts**

In a reflection of this study, it was clear that there are several variables that need to be in place to ensure that innovations, such as the Teacher Academy, can be viable. In programs such as the Teacher Academy, where there is a partnership, all constituents must be aware of the goals, and implementation plan of the program. There must also be clear communication through each phase of the program, to ensure that goals and expectations are met throughout the duration of the program. Assessment is also essential in exploring the initial goals, and to explore how current practices must be enhanced to address the direction of programs. Ultimately, the partnership must work closely to achieve the identified goals, especially to address the shifts in education.

The Teacher Academy was an ideal model for teacher preparation programs. However, it did not have the needed cheerleaders, which Dr. Botman suggested is needed by all innovations.
The Teacher Academy truly pushed teacher preparation programs, especially on the CUNY campuses, to look at their curriculum and make modifications to align with the shifts in the needs and requirements in teacher preparation. Even though a short lived program, the Teacher Academy was responsible for the development of several teacher preparation majors in the sciences on the CUNY campuses. The NYU program was already doing great things in the graduate level, and the Teacher Academy provided additional funding to support teacher candidates pursuing certification in TESOL. The evaluation of the Teacher Academy by CUNY, was unfair, as the University Working Group only evaluated two and a half years of data on the program, and this data did not include any information on program completers, as the first cohort of students were scheduled to graduate and enter the teaching profession a year and a half later. As the program evaluator Dr. Crowe suggested, “It takes approximately five years for you to truly assess if an innovation has achieved its goals and to effectively evaluate the outcomes of a teacher preparation program” (personal communication, 2012). I often do wonder: where are all of the ATs, are they teaching, did they pursue other careers or did they continue their education? Regardless of where they ended up, I assume that some of them were quite disappointed that such a promising program was abruptly ended.

In spite of the initiative or the proposed program, at the end of the day policy makers, educators, parents and teachers are concerned with providing the best education for all students. How we achieve this is the big question that may never be answered.
Chapter 6- Autobiographical Chapter

Dear Mr. & Mrs. Nwosu, I am writing in reference to my concern with Naomi’s progress in the class. Naomi refuses to play with other children, prefers to play alone and can’t explain which elevator button she presses for her apartment. When I ask her questions she fails to respond and is often quiet. I recommend that Naomi be observed and tested by a specialist for learning disabilities. She displays distinctive characteristics and behaviors that are commonly associated with students with learning disabilities. If you need assistance in securing a specialist and/or will like to discuss my observations feel free to contact me.

Ms. Buchman, Alexander Robertson School, 1st grade teacher

This experience marked my metamorphosis from an angry student to a dedicated science educator, who aims to make science meaningful for all students. I plan to expose the common, cultural and social themes that often compromise minority students’ agency in classrooms which result in the negative connotations of education. As well as highlighting the hierarchical structures in urban education that is designed to facilitate the failure of minority students. My story depicts the journey of a young minority female who was able to successfully navigate through an inequitable urban educational system, in order to obtain an education.

My family consists of a medical doctor, an MIT graduate, a registered nurse, a young entrepreneur, and immigrant parents from Nigeria and Martinique. In our house education is a priority, and it is always stressed that a solid education would set you apart from the others and provides you with a stable life. My parents sacrificed at every expense to provide us with extracurricular activities (piano lessons, dance concerts and summer camp) and yearly summer vacations to Nigeria and various European countries. We were all raised to do well in school and my three older siblings graduated within three years from New York City public schools. My youngest brother and I were the misfits and barely graduated from the same public high school. Minimal passing scores on report cards and frequent call from teachers, forced my parents to
reiterate the value of education and the obstacles they overcame to receive an education. My parents’ experience within the United States’ education system opened my eyes early to the inequities; biases and ignorance minority students are often faced with in schools.

My mom often recalled her high school experience, where upon graduating from Franklin K. Lane High School she submitted her college application for review by her guidance counselor and the counselor refused to review her application and instead, handed her an application for employment at the local doll factory. The counselor suggested that the position at the factory was more suitable for my mother, regardless of her exemplary grades; she warned her that she would not make it in college. The conversation and downplaying of her academic skills ignited her eagerness and she went on to pursue a nursing degree at Lehman College. After years of traveling with the Peace Corps and raising five children she became a full Professor at Medgar Evers College, City University of New York and an adjunct Professor at New York City Technical College, City University of New York. She held these positions for ten years, prior to her death in 2009.

My father had a similar educational experience upon his arrival to the United States. His heavy accent betrayed the authenticity of his Nigerian degree, and he was forced to enroll in a city university in order to obtain an additional engineering degree, so he could obtain employment in the field. After completing his first degree at City College, he went on to complete his Masters in Urban Planning at Hunter College. He was advised by an academic advisor that to make it in the United States he would have to forget about his previous education and focus on obtaining the United States standard engineering degrees and certification. Realizing his degrees from Nigeria may not be an asset to him in the U.S., he enrolled and breezed through the programs; while he moonlighted as a taxi driver to support the family, and became the chief
resident engineer of a company that worked directly with the highways and bridges division of the New York State Department of Transportation.

During my earlier academic years my parent’s educational experiences ignited a flame of anger in my heart as I remembered stories of their struggles and compared it to how I was being treated in the classroom. I was always angry and sat waiting for my teachers to step outside of their boundaries. I was ready to attack any teacher who subjected me to any of the following disrespectful acts; teachers making fun of my name, ridiculing my clothing or the lunch my mother packed for me. As I developed into an educator, my attitude shifted and I used my stories as ammunition to ensure that none of my students would ever walk away from education because of my ignorance. In addressing this notion, I shaped my research around the education of teachers, specifically the development of culturally sensitive math and science teachers. Using informed science and math educators who infuse the diversity of the educational needs and the cultural capital their students’ bring to the classroom, in meaningful learning experiences for all students.

The referral to a specialist and the inconclusive results from the extensive assessments marked the beginning of my negative experiences in education and obsession with teacher preparation. As an African female student on scholarship in an upper class, predominantly white private school, I rubbed elbows with the offspring of local elected officials and the elite of New York City in the 1980’s. I was viewed as the little black girl from Hell’s Kitchen who could not afford to attend the school, but helped the school fulfill its diversity quota. My peers were never aware of our differences, but my teachers either tried to ridicule me on purpose or they truly were not aware of cultural diversity. A clear example of this was my first grade teacher’s lack of knowledge of the cultural dynamics in her classroom. In her many attempts to solicit information
from students about their privileged lives, she began her math lesson by asking the class, about
the elevator button they press when they are going home. My classmates eagerly raised their
hands and oohed and aahed as the numbers went higher and they praised the student who lived in
a penthouse and deemed the student the winner. When my turn approached, I slowly placed my
head on my desk, as the teacher began to chastise me and laughed with my peers as they thought
I didn’t have a clue of which floor I lived on. They giggled and laughed, I smiled and thought
that was why my teacher was plump, and she didn’t live in a walk up tenement like mine, where
I lugged my school bag up and down four flights of stairs each day. After this day, I became the
problem child of the class and eagerly created opportunities to torment other children and the
teacher.

My mother was referred to a Gifted & Talented Program and I tested into P.S. 145M (the
Bloomingdale School of Music) fourth grade class. The goal of the Gifted & Talented program
was to reach the individual academic needs of all students and the model was based on two grade
levels per classroom. This was my first encounter with teachers who actually cared and were
sensitive to the diversity of their students. Class assignments were based on individual skill
levels, small groups and collaborative learning was a regular classroom activity. Frequent
celebrations where students and parents shared their cultural heritage were held several times
each year. My experience in this school greatly influenced my teaching style and my emphasis
on being a culturally responsive teacher. The experience in public school provided me with the
lens to be culturally aware of the diversity of students within a classroom and the sensitivity to
address the cultural and academic differences of students without bias.

My first informal teaching experience was my role as a class tutor. Upon entering public
school I was well equipped as I spent the previous summers reading more than the required
books on the summer reading list for my private school. My parents always suggested that doing more than the required would land you on the top. As my new peers read and discussed the books I read the prior summer, I was assigned as a tutor and helped those who needed assistance with understanding sections of the books. I spent silent reading time in a makeshift library reading my book of choice. This experience exposed me to student centered learning, collaborative learning and hands-on-inquiry. My classrooms were filled with rich learning experiences, but that ended with the start of junior high school and reappeared in high school.

My junior high school days are blocked out of memory; it was where learning never occurred. I did the bare minimum to maintain a 65 average and to keep my parents content; my days of junior high school were filled with being picked up by truancy police officers, countless suspensions and parent conferences. I couldn’t wait to get to high school to form a new identity and meet new friends. My two years in junior high school, showed me how often students can easily be deterred from seeking an education, based on a bad experience. I often reflect on these years, and wonder why there was no intervention on behalf of the school. If my parents were not proactive and encouraged me to attend school, I’m not quite sure if I would have made it this far academically.

High school was the benchmark in my life which shaped my love for science education and where the notion of teaching and learning was first experienced. As part of the first graduating class of High School for Environmental Studies (HSES) in 1996, I experienced various learning opportunities, some that were exemplary and others I immediately frowned upon. The high school was one of the first of the smaller themed schools in New York City, which started with a 9th grade of 100 students and grew to its full capacity within four years to accommodate 9th – 12th graders. In the small themed school all teachers were hand selected to
teach in the school, and the hired candidates, had a love for the environment. The most enlightening learning experience in high school that left a lasting expression was with my English teacher Ms. Chalfoun. Ms. Chalfoun was a unique teacher who presented environmental science through English in a creative engaging manner. With her worn hiking boots and lumberjack-checkered shirt she forced the class to think outside of the box and be responsible for their learning. She provided numerous outlets for students to present their knowledge, and share something new they learned. She took cooperative learning to its highest level where each student was actively engaged and contributed to the group’s learning experience. She was unlike the other teachers who stuck to a script and focused primarily on the content knowledge in order to pass the Regents exam. We learned content through inquiry based instruction and we were assessed formally and informally.

My experience in my social studies class showcased how I did not want to teach. I remember one day vividly. The class was discussing the oil trade and we were listing the members of the Organization of Petroleum Exporting Countries (OPEC). The class began to name the European and Middle Eastern countries enlisted in the organization. I raised my hand to add Nigeria to the list, and Mrs. Rose quickly dismissed my contribution. Mrs. Rose was unaware of the annual summer family vacation; I took to Europe and Nigeria to visit my diplomatic family. My extensive travel throughout Africa and Europe exposed me to many historical facts not in our textbook. I never shared my experiences in other countries, because I never wanted to be viewed as a show off, but this day was different. I was tired of teachers often disseminating incorrect information, and I was eager to set the record straight. I raised my hand for a second time and expressed that Nigeria was an active member of OPEC as the city skylines were flooded with the skyscraping oil towers. Once again I was not taken seriously and I put my
head down on the class textbook. I looked at the cover of the textbook and there right in front of my face there was a stamp of Nigeria with a large oil well on it. I quickly raised my hand and blurted out my discovery. I was ignored and laughed at by my peers. To compensate for the public humiliation, during each class I shut down and didn’t participate for the rest of the semester. I just kept thinking that if she was unsure she should have simply told me, she would get back to me or ask me to research this and bring evidence to class. From that moment on, I realized the inequity in education and I was on the bottom end of the totem pole. However, I came away with a realization that students bring respect and acknowledgement of diversity and capital to each classroom. This experience failed to deter me from education and I went on to major in environmental science in college.

In 1996, I transitioned from a high school graduate to a college student. Purchase College at the State university of New York, further shaped my notion of science education as I experienced classes that skipped the lecture and were taught by having me actually conduct science experiments and develops solutions to real environmental issues in the community. My college years included various off-campus positions and volunteer opportunities to tutor in schools and educational settings. My love for science and science education continued to grow. In my junior and senior years, I gained invaluable teaching experience in the college’s tutoring program, which entailed working with students in a group home on science and math. The home sat on acres of land that ran through a watershed. However, the students were confined to classrooms, and the faculty never used the environment as a learning tool. During my tutoring experience at the juvenile facility, I would often negotiate with students so that if they behaved I would conduct short math and science mini-lessons based on outdoor environmental resources. During my senior year I participated in a pilot partner program with Purchase College and a local
Westchester County Public School, as an environmental science activity specialist. In this role, I visited classrooms and worked with students on the bioremediation of a polluted pond in the back of their school building. This was a vibrant awakening experience that led me to consider a career in teaching. It was amazing to see the students’ eyes light up when they saw the final project and their new pond, and the pay-off of their dedication and intense work in cleaning up the pond and planning the bioremediation. The hands-on approach to a realistic issue in their own backyard allowed these students to explore various aspects of biology and environmental science that could not have been covered in a textbook.

After graduating from college, I was eager to join the workforce with a “real job”, I had not been accepted to SUNY Buffalo’s environmental law program and so, I gave up my dream of becoming a lawyer. After searching without end, I finally landed a position at the New York State Department of Labor as an Alien Certification Specialist. I spent the first two weeks adjusting to the cubicle style work environment, and shortly after I was asked by my supervisor to train other members of the team. Once again, I was taking on the role of a tutor/teacher. I went home one evening and made a promise to myself that I would not be at the job for more than a month. I applied to the New York City Teaching Fellows Program. The New York City Teaching Fellows Program was launched in 2000, to address the issue of the teacher shortage in the New York City public school system, which at that time employed approximately 11,000 uncertified teachers https://www.nyc imparting fellows.org/about/overview.asp). I was rejected from the New York City Teaching Fellows Programs and was informed that the program at that time was for career changers, but in some mysterious manner my resume was forwarded to the Alternative High School District (District 79) and I was hired as a science teacher in an alternative high school through the ancient transcript review method. Through this method, your
college transcripts were reviewed and any of the subject areas in which you completed 12 credits in, you were eligible to teach that subject area. I was allowed to teach general science, Biology and Earth Science.

My first day of teaching opened up a door for which, I was not ready for. September 9, 2000, marked my first day of teaching in Brownsville, Brooklyn, Eight Plus Learning Academy. The school was located in one of the most impoverished communities in the United States. A place plagued with poverty, violence, incarceration, and disease. The community lacked a local high school but was home to one of the six New York City Juvenile Detention Centers. The Eight plus Program was created in 2000, to address the Chancellor’s termination of 8th grade social promotion for students who failed the 8th grade English Language Arts examination. Once students completed a full year in the program they were sent off to high school. My first day of class was spent battling with the few disgruntled teenagers who felt that getting left back was not their fault and it was the teachers. My first evening after work was spent crying looking for a car online due to my fear of the men and young gang members congregated at the train station who often had confrontations with pedestrians. I spent the first year at the school wondering what was on the minds of the educators who taught these students over the past nine or more years and why were these over aged eighth graders unable to read and why was it acceptable to have fifteen and sixteen year olds in eighth grade. I was no longer scared of walking to and from the train station as I began to speak to the congregated males and they began to call me “Teach”, but I still drove to work each day. I was scared of what would happen to my students the following year if they didn’t have a teacher like me who cared and was willing to invest the time in them. Would they encounter a teacher like me who was willing to bring old Bernstein Bear and Amelia Bedeila books to teach the foundations of reading and literacy? The next two years in the
program were spent helping as many students as I could and exposing them to other aspects of life. Approximately 80% of my students never traveled outside of the borough but 70% were on probation through the Department of Corrections. Based on these statistics, I felt it was my responsibility to provide and expose these students to as much as I could. The first step was exposing my classes to other neighborhoods for hands-on excursions.

Class trips to the city were exciting to the students as they couldn’t believe the various cultures that were present in New York City, which existed beyond the invisible community of Brownsville. My classroom excursions included the Museum of Natural History, the Museum of Modern Art and the Bronx Zoo. For the majority of my students, our class trip was the first time they had ventured to Manhattan. I was quite surprised, that these students had never ventured outside of the borough. In addition, to the lack of exposure to outside resources, the school had issues with securing the minimal classroom resources. Teachers in the school spent much more than their allocated Teachers Choice funding.

My experience at the alternative high school allowed me to witness the misallocation of funds by school districts, the lack of resources that minority schools receive and the low expectations of teachers. Teachers often made derogatory statements about these students and often expressed that these students were too old to learn. As students repeating eighth grade for the second or third time, some teachers felt these students did not have a chance to make it in high school. I felt that if these students were provided with just a little more time and resources, I would have not attended two student funerals, received ten baby shower invitations from expecting students and have saved newspaper clipping of my twenty students who made the news for random crimes. These factors infused my passion to return to this community and create a high school, which incorporated a community-learning center, where guardians and
community members can further, their educations as well. The Eight Plus Program was deemed a failure and it closed its doors in 2003. The students who did not make the grade in 8th grade were forced to remain in junior high school.

In the fall of 2003, I joined the staff at my alma mater, High School for Environmental Studies, where I was part of the first graduating class. My experience was like night and day. The school was on the list of the top 100 schools in New York City and was afforded the opportunity to select their own curriculum and had an abundance of resources. In my three years at the school I was provided with the opportunity to further hone my skills in science education and school administration. I led several science workshops and founded the school’s Robotics team. I designed and taught a freshman honors science research course with the New York Academy of Science, and led the high Schools’ For Inspiration and Recognition of Science and Technology (F.I.R.S.T.) Robotics team to the final competition in Atlanta, Georgia, with fifteen students. I enjoyed the inquiry-based teaching and my students enjoyed learning, however, this was short lived as my Principal shaped me to take on an administrative position in the school. I became the intern Assistant Principal and Head Dean of security at the high school.

My new position opened my eyes to the inequities of education within the school. I witnessed teachers discriminate against minority students, allowing them to roam the halls and sit in the back of the classroom being unproductive. The majority of the students who we selected to attend the school, under the Education Open admission process, were pushed out through a tracking of disciplinary write-ups; some that were authentic and others were provoked. Students, who were selected to attend the school through the No Child Left Behind Act, were identified and quickly acquired write-ups for minor infractions and were asked to select a different school, as the school was not suitable for the student. I was able to observe how the
school remained on the top 100 school list. Students were being pushed out and guidance counselors were meeting with parents to sign their children out, under the pretense that they would graduate faster at alternative high schools. When I observed this trend and realized that the school’s administration was all about keeping up appearances, staying off the Chancellor’s radar and not providing all students with an equitable education, I quit. I could not see myself day in and day out as the enforcer for teachers who never thought certain students couldn’t make it that far and the new teachers who scurried to teach Advanced Placement and Honors level courses. I was no longer part of the system that was in place to breakdown minority students who looked like me, but didn’t have the family support and the capital to make it as far as I did. I wanted out and I wanted to assist in the preparation of effective teachers who are equipped with the resources to use their content area as a means to promote social justice within democratic classrooms. My life experiences have influenced and shaped my lens and worldview of my research and professional attitude.

In May 2006, I interviewed with President Jennifer Raab, Provost Vita Rabinowitz and Special Assistant to the Provost Deborah Gardner at Hunter College in CUNY. I was hired as the administrative assistant of the Hunter College Teacher Academy. During the first three months in my position I spent the summer working on registering accepted students, profiling students, running an early field experience and facilitating an overnight camping trip. This was a new experience after six years as a science teacher in a NYC public school. When I read the job description I was intrigued by how teachers were trained. As a teacher who entered teaching through the over the counter transcript evaluation and provisional teacher placement process, I never completed a teacher training program. In my six years of teaching and year of school leadership I completed two Masters degrees in education and still had questions on training
teachers I spent most of my time in my graduate courses expressing my thoughts of a first year teacher and searching for clues on classroom management, lesson planning and finding resources to teach my science courses. Going into higher education and teacher training was a passion and it was my ultimate goal to understand how teachers are trained. Do teachers teach as they were taught, or do they incorporate what they have learned in teacher education courses in developing their personal pedagogy? As a graduate of one of the first smaller themed public high schools—High School for Environmental Studies, I experienced hands-on learning during each class from walking through the NYC watershed route, visiting a water treatment plant, to earning a hunting license in a summer Department of Conservation camp. I definitely wanted to teach as I was taught in this class. However, I thought about when school was not as funny, when my middle school teacher told me Nigeria was not part of OPEC after I explained my view of the oil rigs I viewed prior to landing in Lagos and she ridiculed me in front of the class even after I pointed out a picture of an oil tower on a stamp that graced the cover of our Social Studies textbook. The greatest thing about that experience was that all of my other courses never diverted in this manner and my other teachers stuck to the program and truly infused inquiry based learning and environmental science through their curriculum.

As I left high school, I was eager to exhibit what I had been taught. The opportunity to show others that learning was fun especially in mathematics and the science where learning in the classroom could be facilitated by hands-on inquiry, observations and required internships in the environmental field. This is where my love of the sciences came and during my six years in secondary schools I lived through this motto and taught, as I was taught and it has worked well.

I went in to this position thinking that training teachers was teaching them how to teach content through various teaching styles. That’s what they tried to teach me in my first few
weeks. I never imagined the formula that goes into creating a great teacher includes exposure to pedagogical content knowledge, content knowledge, pedagogy, teaching styles, classroom management skills, cooperative learning, differentiated instruction, multiple intelligences, etc. In finding the correct formula to training teachers there are additional factors that can’t be taught that aspiring teachers must encounter on a first hand basis. This ranges from the inclusion of special education students in a classroom to knowing the communities your students reside in and the social capital they each bring to the classroom.

In my current position as a teacher educator, I strive to influence the higher education level policy makers who influence teacher education programs. During my duration with the Teacher Academy I provided science and math pre-service teachers with the resources to acknowledge the importance of their role as a teacher and how to be effective culturally responsive teachers. I was aware of the numerous constraints my students would face when they entered the New York City Public School System, but I hoped they would refer to the way they were trained and make decisions that add to their students’ learning experiences. I provided my students with hands-on opportunities to see model teaching and to explore teaching methods that were not aligned with the methods we explored in seminars. In my continuous work as an educator, I continually aim to make a difference and assist in the struggle of providing all students with an equitable and meaningful education, in democratic classrooms.

My original role in the Teacher Academy was as an administrator who gathered documents from students and prepared documents for tuition payment. Hunter College was the only Teacher Academy that admitted students to BA/MA and BS/MA dual degree programs. Students were expected to complete degrees in Mathematics, Biology, Chemistry, Earth Science or Physics within a five-year timeframe. When the first cohort
of students were admitted, it became clear that additional resources needed to be allocated to this population of students and additional resources were needed my role was revamped and my list responsibilities grew. My experience as a math and science educator also assisted in the shift of my responsibilities. Within in my capacity of the Teacher Academy, I advised students of major and general education requirements, I authorized stipend payments, served as the host liaison, taught the science research school, arranged host school visits, hired and managed Host School Supervisors.

In the first semester of the Teacher Academy students were advised to complete courses in a sequence designed by the Hunter College science and math departmental chairs. Upon reviewing student records after their first semester, it became evident that even though the admitted Teacher Academy cohort exceeded the admission criteria of the college, these students had difficult in excelling in the suggested sequence of courses outlined by the departmental chairs. It was clear that students would not be able to move through the sequence of courses as originally planned. Each semester I worked in collaboration with the departmental chairs to create specific sections designated for Teacher Academy students that were instructed by Professors who were aware of the needs of the students and were selected based on their pedagogical instructional method. The participating Professors also provided tutorial sessions for students and monitored student’s bi-weekly progress. These Professors became essential to the Teacher Academy and each semester they were selected to teach the same course/s. Having the same professors teach Teacher Academy course, I was able to debrief with each Professor and determine that each of the students in the cohorts should remain in the program based on them passing higher level major courses. In addition, each Professor assisted in
reviewing the records of probationary students, and made recommendations. Students who were asked to leave the Teacher Academy were counseled into other majors and still were able to utilize Teacher Academy Resources. As an Academic & Major Advisor, I also assisted departments in reshaping their curricula and creating dual degree programs (Physics and Earth Science Bachelors of Science and Masters of Arts dual degree programs) were created to facilitate the five-year BS/MA programs Teacher Academy students were enrolled in.

My second and most important role in the Teacher Academy was the role as the Host School Liaison. As the Host School Liaison, I served as the Liaison between the public schools administrators, host school teachers (participating classroom teachers who allowed Teacher Academy students to observe in their classrooms), the Hunter College Teacher Academy administration and the Graduate Teaching Fellows (GTFs) from the CUNY Graduate Center who served as Host School Supervisors. The Hunter Colleges Teacher Academy host schools, consisted of Manhattan/Hunter College High School of Science, The Young Women’s Leadership Academy, Park East High School, The High School of Fashion Industries, and The High School of the Arts and Technology  Graduate Teaching Fellows were assigned to each of the schools and conducted weekly seminars I worked closely with the Graduate Teaching Fellows to ensure that students in the host school were appropriately supervised and had an off-campus resource for any issues that derived in the host school. The Host School Liaison was key to ensuring that school administrators and host school teachers, were aware of the goals of the program and provided Teacher Academy students with the opportunities to view pedagogy aligned with the Teacher Academy’s adaptation of the Santa Cruz standards and the culminating
activity of teaching a lesson or several lessons. However, even though the Teacher Academy had a strong presence in the host schools, each student encountered a different experience, and this ranged from students who only observed on each visit and student who were responsible for a full class period. With such a range in host school experiences, student host school seminars also varied and were contingent based on the individual experience each student had within the host school teacher’s classroom. As compensation and to encourage Host School teachers to provide students’ with the ideal classroom experience, teachers were provided with waivers to take a three-credit course at Hunter College each semester they opened their classroom doors to Teacher Academy students.

My experiences with education have driven my passion to explore teacher preparation. As a program completer of a traditional teacher preparation program, I felt that my education was limited in equipping me with the tools needed to work in a high needs public school. I wish I completed a program similar to the Teacher Academy, which included an early pre-service experience that provided students with the opportunity to observe and be in a realistic environment. I definitely experienced a culture shock when I entered the classroom, and I found that my education courses did not prepare me. In designing my research, my interest was based on exploring teacher preparation and the identification of components of alternative and traditional teacher preparation programs that should be fused to create a teacher preparation program that provides candidates with the tools to enter high needs public schools. My research, has allowed me to provide recommendations for an ideal teacher preparation program.
Appendix

Survey Questions for Teacher Academy students

All the information you provide will be held confidentially. No names or identifying specifics will appear in any report or publication. Your participation in this study and survey is entirely voluntary. You may decide to discontinue participation at any time.

Last 4 digits of SSN#: __________________________

E-mail: ________________________________

Where were you born: __________________________

Age _______ Sex _______ Race/Ethnicity ______________________________

High School you graduated from: ______________________________

Current host school or full-time teaching assignment: ______________________________

Cohort #: ______________________________

Teacher Academy Campus: ______________________________

Content Area (Chemistry, Biology, Earth Science, Chemistry, Physics, or Math) ______________________________

Student Interview Questions

1. What year did you enter the Teacher Academy? _______

2. What type of teaching experience did you have before entering the Teacher Academy?

3. What influenced you to pursue a career in teaching?
4. Briefly describe your fieldwork experiences thus far (indicate what level you have observed, the activities you have participated in, etc.).

5. Indicate the content courses you have completed.

6. Describe the education courses you have completed and the fieldwork activities associated with specific education courses.

7. Briefly describe what you have learned about teaching and learning in your host school seminars.

8. Briefly describe the professional teaching standards and how you have used them in your host school seminar and/or host school classrooms.

9. Which components of the Teacher Academy will you keep, delete, and/or modify?

**Graduates**

1. Identify the school where you are currently teaching in.

2. Did you complete your host school internship at this school? Is this a host school that your college used?

3. Using a scale of 1-5 (where 5 = highly prepared & 1 = not prepared in this area), rate how well the Teacher Academy prepared you in the following areas: classroom management, lesson planning, content material, differentiated instruction, the workshop
model, pedagogy, standards, interdisciplinary lesson panning, cultural awareness, and building connections in the classroom.

4. What courses are you currently teaching this year? Please include the class title, grade, level/track (honors, regular, special education, inclusion & remedial), number of students in each section and number of hours per week. If you are co-teaching any courses, please indicate.

5. Indicate how regularly you work with each person (answer N/A for titles you have not interacted with): math or science coach, mentor (Teacher Academy), mentor (City assigned first year mentor), assistant principal, principal, colleague/s, or other Teacher

6. What characteristics of your school community do you enjoy, and what are the ones you would delete?

7. What are the challenges and opportunities of teaching in your current school?

8. Briefly, explain the aspects of the Teacher Academy that have assisted you in facing the listed challenges and allowed you to take advantage of the opportunities?

9. Briefly, explain what aspects of the program you think are missing or need to be reinforced and/or deleted to ensure that future graduates are not faced with the same or similar challenges?

10. Briefly explain what aspects of your teacher preparation program that were most helpful in your development as a math/science teacher.
11. Briefly explain how well each aspect of your coursework prepared you to teach: content course, math/science education course, host school seminar, host school classroom experience, and general education courses.

12. How many more years beyond the required two-year commitment are you planning to teach in the New York City public school system?

13. What are your current professional and academic plans?

14. Additional Comments:
SURVEY for Teacher Academy Directors and Campus Deans

All the information you provide will be held confidentially. No names or identifying specifics will appear in any report or publication. Your participation in this study and survey is entirely voluntary. You may decide to discontinue participation at any time.

Teacher Academy Campus: __________________________________________
Teacher Academy Role/Title: ______________________________________
Additional Roles/Title held: _________________________________________

Academic Years Involved in the Teacher Academy:

- 2006-2007
- 2007-2008
- 2008-2009
- 2009-2010

1. To what extent were you involved in the planning of the Teacher Academy at your campus? Please select all the activities you participated in:
   - Attended campus based planning meetings
   - Attended campus-wide planning meetings
   - Attended CUNY Central planning committee meetings
   - Participated in the selection of the first cohort of students at your campus
   - Participated in the selection of cohort II and cohort II at your campus
   - Participated in the development of the host school fieldwork curriculum
   - Participated in the selection of host schools (NYC public schools)
   - Participated in the development of the Teacher Academy specific curriculum at your college

2a. How involved were you in designing TA students’ fieldwork experience?
2b. If you selected either highly or moderately involved, please describe the structure of the TA students’ fieldwork experience and course work.

How was it similar or different from the traditional and/or alternative education programs hosted by your college?

In what ways did the community of practice, legitimate peripheral participation, and constructivism play in the development of your program?

3a. What factors do you believe lead to the discontinuation of admissions to the Teacher Academy (please select all that apply)?

- The student retention rates were low
- Recruiting eligible students was a challenge
- The program was too expensive (administrative cost, stipends & tuition)
- CUNY Central did not support the program (especially after the shift in administration)
- The Teacher Academy curriculum was similar to curriculums already present at CUNY campuses
o Campus based administration did not support the program
o Other, please explain

3. Extend the Teacher Academy or adapt components of the Teacher Academy and implement them in current campus based teacher preparation programs?

4a. Which constituents of the planning committee (both internal and external) and observers of the institutionalization of the Teacher Academy would you say had an influence on the current state of the Teacher Academy (please select all groups that apply)?

   o Petrie Foundation
   o NYU
   o CUNY Central Teacher Academy Administrative staff
   o DOE- Partnership of Teacher Excellence
   o The nine participating CUNY campuses
   o Former TA Dean- John Garvey
   o Former TA Dean- Jane Ashdown
   o Current TA Dean- Joan Lucariello
   o Vice Chancellor- Selma Botman
   o Vice Chancellor- Alexandra Logue
   o Other (please identify group)

4b. In what ways did each selected group/individual influence the decision to discontinue the Teacher Academy?
5. What do you believe was the planning committee’s primary mission/s and purpose/s at the time of the three phases of the Teacher Academy (Please describe why you believe the Teacher Academy planning committee as having this specific mission/s and purpose/s you identified)?
   o Planning Phase

   o Implementation Phase

   o Discontinuation Phase

6. Please select the challenges you feel campus Directors faced (please select all that apply)
   o Lack of support from campus based administration (College president and Provost)
   o Lack of support from CUNY central after the shift in CUNY Central administration
   o Lack of funding
   o Confusion of the mission and goals of each constituent (CUNY, DOE, NYU and the Petrie Foundation)
   o Lack of support from campus education programs and liberal arts and science major departments
   o Recruiting eligible students
   o Increasing student retention rates
   o Administrative demands from CUNY Central (assessments, stipend payments, etc.)
   o Promoting the collaboration of education staff and liberal arts & science faculty
   o Other:
7a. The Teacher Academy should be funded by your campus.
   o True
   o False
7b. Please explain why or why not


Interview Questions for CUNY Executive Administrators

1. During what period were you a member of the CUNY Teacher Academy planning group?

2. Please describe, to the extent you are able, the process and visions leading up to the implementation of the Teacher Academy and the discontinuation of open admissions to the program?

3. Which constituents of the planning group (both internal and external) and observers of the teacher preparation program would you say had an influence on the process or the outcomes? In what ways did they influence, or try to influence, the implementation of the program?

4. What do you personally believe was CUNY’s primary mission and purposes at the time of the introduction of the program? How were they similar and/or different from the other constituents?

5. Why do you think CUNY opted not to fund the Teacher Academy after the third year of Petrie Foundation money?

6. How did the shift in the original CUNY administration (Selma Botman and John Garvey) to the current administration (Alexandra Logue, Joan Lucariello - the newly installed TA central administrator) shift the mission and purpose of the Teacher Academy and its status?

7. Why do you think the Teacher Academy planning committee decided to close admissions in the Fall 2009 semester?
8. Who else do you recommend I interview as part of my research?
References


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**Organization Documents**


**Websites**


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