What Motivates Science Teachers to Teach in Urban Settings

A Mixed Method Approach

by

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ABSTRACT

The high rate of teacher turnover in the United States has prompted a number of studies into why teachers leave as well as why they stay. The present study aims to add to that knowledge specifically regarding why teachers choose to stay at urban schools. Several reasons teachers in general choose to stay have been identified in previous studies including faith in their students, continuing hope and sense of responsibility, and love among others. The importance of such a study is the possibility of designing programs that reinforce teacher success through understanding the personal and professional reasons teachers choose to stay. Getting teachers to stay is important to the nation's goal of providing equity in science education to all children.

Important to this research is an understanding of motivational theories. Already a challenge in the over-busy modern world, the ability to self-motivate and motivate others is of particular importance to teachers in urban schools as well as teachers struggling against restrictive budgets. Studies have shown teachers extrinsically motivated will need external rewards to encourage them while teachers who are intrinsically motivated will have their own internal reasons such as satisfaction in contributing to the future, self-actualization, or the joy of accomplishment. Some studies have suggested that teachers who decide to remain teaching tend to be intrinsic motivators. Unfortunately, the environment in most Western country educational systems presents a challenge to achieving these intrinsic goals. As a result, self-determination theory should play a significant role in shaping educational programs.

The following study examined the perspectives of secondary school science teachers, specifically regarding why they opted to remain within the classroom in urban districts. It was conducted utilizing interviews and surveys of teachers working within urban school districts in Arizona and California. The sample consisted of 94 science teachers. More than half of the participants were White females and 36 percent of them had been teaching for more than 15 years. Participation in the study was based on self-selected volunteerism. Survey questions were based on self-determination theory and used Likert scale responses. Follow-up audiotaped interview requested information regarding identity and their social interaction within the urban settings.

The survey responses were analyzed using SPSS for descriptive statistics, one-way ANOVA, and linear regression. The results of this study provide insight on what works to motivate science teachers to continue teaching in less than ideal school settings and with such high bureaucratic impediments as standardized testing and school rating systems. It demonstrates that science teachers do seem to be intrinsically motivated and suggests some areas in which this motivation can be fostered. Such results could help in the development of teacher support groups, professional development programs, or other programs designed to assist teachers struggling to deal with the specific problems and needs of inner city school students.

DEDICATION

To my beloved Mom and Dad

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Many thanks go to Dr. Dale Baker my chair. She has been the ideal mentor, and a role model as a science educator. I cannot picture this whole experience without her. I thank Dr. Eric Margolis for inspiring me and for becoming my friend too. I look forward to our colleagueship and friendship growing for many years to come.

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INTRODUCTION

In the past few decades, the concept of teacher turnover in the United States has permeated literature and philosophy. Researchers, like Ingersoll (2004), have developed multiple theories as to why so much turnovers in education exist. Ingersoll (2004) stated,

> "Of those who leave because of job dissatisfaction, most link their turnover to several key factors: low salaries, lack of support from school administrators, lack of student motivation, student discipline problems, and lack of teacher influence over school decision making" (145).

While Ingersoll discussed the specific reasons for teacher turnover, Nieto, (2003) decided to look at the problem from a different perspective. She questioned why teachers might stay in their jobs instead of why teachers leave. She argued that urban teachers would be much more effective if they were given more professional development and support. Both Ingersoll and Nieto found that there was high demand in the education system for teachers who were willing to influence, inspire, and persist within their profession.

Although I am not an American citizen, I experienced the difficult process of finding a good school for my three children. At first, locating a high quality school was not easy because I was unfamiliar with the system, but it did not take long before I understood the pattern. I wondered what school I might place my children in if I was a recent emigrant. If I were in this predicament, I might have ended up enrolling my children in an urban school. As I entered the graduate

program, I kept thinking about that matter. I thought about issues such as equity, multicultural education, and social justice. The issues of motivation and persistence, however, were not yet a part of my thought processes. As I explored deeper into my own education and gained experienced in certain fields, I started to develop a clearer vision about the research that I wanted to do. I started to think about the teachers who stayed in the urban schools to help minorities and those with lower socioeconomic statues (SES). What kept them there and how did they persist?

Background

The annual teacher attrition rate in high-needs schools in the United States is approximately 20% (Ingersoll, 2001). Teacher attrition is a result of teachers deciding to leave their profession, often after just a few years. There are several factors that contribute to teacher attrition including budget cuts, classroom overcrowding, and unavoidable high-stakes testing (Ingersoll, 2001). Furthermore, Smith and Ingersoll, (2004), and Steinberg and Kincheloe, (2004) reported that, nationally, high-poverty schools located within urban communities have higher teacher attrition rates when compared to more affluent school districts. The United States' history of inequity in education has created many ill-equipped and understaffed inner city schools as well as rural school districts. These under-resourced schools tend to be racially segregated as well. They are particularly lacking in the fields of science, technology, and mathematics (Darling- Hammond, 1999; Tate, 2001). Ingersoll (2001) reported that teacher turnover in urban districts results in schools with many part-time and substitute

teachers, new and unqualified teachers, and often requires individuals to teach out of their field of expertise. Urban schools are also more likely to fill vacancies with teachers who are less-than qualified and require additional on-the-job training (Ingersoll & May, 2009).

In the field of science education, there is similarly increasing concern about teachers who are leaving. Darling-Hammond (2003) hypothesized that the high reason for turnover was because of the dissatisfaction with the low salaries in teaching. Shugart and Hounshell (1995) found that teachers who had more advanced scientific knowledge and expertise were more likely to reject the idea of teaching or to leave the teaching profession after a shorter period of time. Nevertheless, the subject of science continues to attract attention as the need for teachers entering this field with advanced knowledge remains high (National Science Board, 2006).

Equity is central to the current reform movement in science education. In response to calls for change in *Science for all Americans,* Rutherford and Ahlgren (1990) presented a vision of science literacy for all students. The goals established in this germinal work, combined with the *Benchmarks for Science Literacy* (AAAS, 1993) described in a companion report by the American Association for the Advancement of Science's (AAAS) Project 2061, set the stage for reform. It stated that all students deserve equitable access to challenging and meaningful learning and achievement in science regardless of race, ethnic group, gender, socioeconomic status, geographic location, age, language, disability, or prior science achievement (AAAS, 1993, p. 20). This statement has profound

implications for teaching and science education throughout the school community. Unfortunately, the *Science for all Americans* concept is not being utilized in many schools in the nation, especially in urban areas. Many teachers working in urban schools tend to be less experienced and poorly prepared when compared to those who work in suburban school districts (Nieto, 2003). Ingersoll (1999), in a previous study, found that students who attended urban schools had limited access to science due to the shortage of certified science teachers or because the administration at these urban schools did not care about (or could not afford?) hiring highly-qualified science teachers.

Therefore, looking at why science teachers stayed, rather than why they left, might hold the answer to further develop knowledge about retention and teaching science in urban schools. Teachers stay in education for some of the same reasons they enter the teaching field: trust, confidence, faith in their students and in their subject matter, a continuing feel of hope and responsibility, and the rewards of meaningful relationships (Nieto, 2003, Williams, 2003). Nieto identified internal factors as well: love, hope, possibility, anger, desperation, intellectual work, and the belief in the talent to structure the future. For Neito, staying in urban schools is associated with a teacher's love, belief, and respect for their students (2003). By identifying and understanding personal and professional features, behaviors, and school settings associated with a teacher's decision to remain in the profession, educator preparation programs and supervising administrators could design programs to reinforce the confidence and success of teachers.

Neito's research made me think about topics such as resiliency, enthusiasm, and self-motivation. As I read about mobility and turnover versus retention and persistence, I came across a variety of motivational theories.

It is an almost universal concern today to find ways to self-motivate and to energize oneself and others in businesses, workplaces, and in education. Given the high demands placed on people in their working lives, particularly in the Western World, the need to motivate oneself and to motivate others is absolutely essential. In education, it is vital for both learners and teachers to find ways to maintain an enthusiastic approach to learning. Although much is made of finding ways to keep students motivated, it is also essential that teachers find ways to motivate themselves, given the high demands and stresses they face in their schools.

Teacher motivation has to do with their overall attitude towards work, and a teacher's desire to contribute through pedagogical practices in the school environment (Schunk, Pintrich, & Meece, 2008). Educational research suggests that motivated teachers expend effort to succeed, and that motivation can influence when and how they perform (Pintrich & Schunck, 2002).

There are two types of motivation: intrinsic and extrinsic motivation. Extrinsic motivation is affected by factors unrelated to the task that a person is performing. Some examples of extrinsic motivation are money, good grades, and other external rewards (Brophy, 2005). Teachers who are extrinsically motivated are goal oriented, and they may pay little attention to their own happiness and personal development (Ryan & Deci, 2000). For this person, achievement is the

only aim that gives them joy (O'Neill, 1995). An extrinsically motivated teacher may perform an activity/duty in order to obtain a reward such as a salary increase.

Intrinsic motivation refers to inner and authentic inspiration, which a person reacts to without any expectations of external rewards (Ryan & Deci, 2000). In this frame of mind, teachers decide to do something because they like it, or because they decide it is a beneficial thing to do for their students. A teacher who is intrinsically motivated may undertake a task for its own sake, for the satisfaction it provides, or for the sheer joy of accomplishment and self-actualization (Ryan & Deci, 2000; Schunk, Pintrich, & Meece, 2008). Johnson, Berg and Donaldson (2005), and Waddell (2007) found that intrinsic motivators shape a teacher's decision to remain teaching. These researchers reported that teachers choose their profession because they feel they have a calling for this type of work and a passion for sharing knowledge.

The above studies argued that intrinsic motivation is an essential characteristic for educators. However, increasing external controls on teaching and teachers in most Western countries make it challenging for teachers to maintain a sense of motivation, energy, and commitment. It is only through the development of internal sources of motivation, commitment, and ongoing dedication that the teacher will avoid dissatisfaction and disappointment in their career. School leadership, on the level of local and governmental management, needs to take the necessity of intrinsic motivation into account. Styles of management in schools and within the teaching staff have been specifically noted

as essential components in empowering teachers toward self-motivation and self-actualization within their careers (Schunk, Pintrich, & Meece, 2008).

A theory that is particularly relevant for this study is the Self-Determination Theory (SDT). Self-determination is a combination of attitudes and abilities that guide individuals to set aims for themselves and to take the initiative to reach these aims. This theory proposes that human motivation is dependent on a person's feelings of "autonomy, competence, and relatedness" (Ryan & Deci, 2000p#). It is where the conditions are most suited to growing these feelings in individuals that the highest motivation, engagement in, dedication, success, and persistence can be found.

Purpose Statement

As the teachers and educational researchers explore why many teachers leave the field, it is important to examine the perspectives of those who recruit and retain individuals. Therefore, my study examines the perspectives of high school and middle school science teachers, focusing on reasons why they chose to stay and teach in urban settings. The study also investigates the motivational factors that influenced their decisions to stay in the classroom.

Mixed methods designs provide pragmatic advantages when exploring complex research questions. The qualitative data can clarify and support survey responses, and statistical analysis will help in giving a detailed assessment of response patterns about motivation. Mixed methods design was employed in this dissertation to gain an in-depth understanding of why teachers chose to remain, despite the negative portrayals of urban settings we read and hear about. The

results of this study shed light on some science teachers' perceptions about working and continuing to be employed in an urban setting. The reasons identified in the findings could be used to develop support groups, professional development activities, and programs to aid teachers in dealing with the issues in urban schools.

Research Questions

My study explored potential differences in perceptions of what motivates teachers. The dependent variables are the level of perceived autonomy, relatedness, and competence. The independent variables were years of experience and ethnicity. I also investigated how the decision to stay was affected by the science teachers' practices and identity.

Therefore, my research questions are:

- Are science teachers in urban setting intrinsically motivated about persisting in urban schools?
- Do years of experience/race affect science teachers' motivation (autonomy, relatedness, and competence)?
- How was the decision to stay affected by the science teachers' practice and identity?

Definition of Terms

Turnover: Turnover is defined as teachers leaving the profession, changing field of profession or schools.

Teacher Attrition: Those who leave the occupation of teaching altogether (Ingersoll, 2001).

Mobility: The movement or transfer from one school or school district to another.

Qualified teachers: A teacher who has a state certified degree from an education program or has passed the state teacher-licensing exam.

Beliefs: A subset of a group of constructs that names, defines, and describes the content of mental states that drive a person‘s actions (Zheng, 2009, p. 74).

Urban culture: Refers to behavioral patterns of cities and urban areas (Clark, 1996).

Urban schools: Refers to schools in high-poverty areas, which serve students of low-socioeconomic status (McKinney, Berry, Dickerson, & Campbell-Whately, 2007).

Significance of the Study

The existence of inequity in the educational system in general, and science, in particular, has become a taken-for-granted part of American politics and policy. Yet, thinking about possible solutions to the problem through a pessimistic lens might not be the most advantageous way to improve results for urban schools. Motivation to teach, specifically in urban settings, becomes an important element of the sustainability of schooling. There were studies that showed how significant changes can be made to a school when it has teachers who help to close the achievement gaps and provide opportunities for their students (Carey, 2004).

I expect to offer suggestions in the concluding chapter about each teacher's individual source of motivation. The interpretation of the data is intended to assist school leaders in making decisions concerning on-going staff development. This information may allow new forms of career development to occur for the teaching profession specifically and urban schools in general. Ideal career development matches the needs of the organization with the needs of the individual. It will also provide school district administrators with information about the views of teachers in urban districts. Understanding the psychological and demographic constructs of retention and personal motivational sources will help to increase the level of motivation for teachers to educate and engage in science.

Limitations of the Study

The study will take place in Arizona and California. As a result, the outcomes will be restricted and limited to a specific ethnicity,Hispanic/Latino, who comprise the largest ethnic minority in Arizona and California urban school districts. Generalizability will also be limited by the size and location of the school districts involved in the study. The number of teachers involved in the study may also limit generalizability. This study will be limited to the teachers' perceptions of their own job satisfaction and their feelings toward being employed in an urban setting. The responses of the participants in the study may or may not be representative of other teachers in different urban settings.

Summary

Within the first chapter of this dissertation, the topic of teacher turnover was introduced to the reader. This seems to be especially true for science teachers. In fact, it is enough of a problem that researchers have begun to turn their focus onto the issue in order to understand why more and more teachers are leaving the profession, and what sort of solutions might exist to attract and keep teachers at urban and under-resourced schools.

Some of the reasons for teacher turnover that are discussed in this paper include: low salaries, little support, lack of education or experience, and problems with student behavior and class size. Urban districts, in particular, are said to have more teacher turnover than affluent and suburban school districts (Ingrsoll, 2001). The idea of extrinsic versus intrinsic motivation is thought to be an important factor in lowering the rate of teacher turnover. Extrinsic motivation is described as being motivated by outward elements such as money, and intrinsic motivation has more to do with internal rewards such as personal satisfaction.

This paper investigates the more positive side of teacher turnover. Instead of looking at teachers that left their professions and why they chose to do that, my research focuses on the teachers who decided to stay and their reasoning for that decision.

This extrinsic and intrinsic motivation factor resides at the center of my dissertation research. Teachers in select urban school districts in California and Arizona were interviewed and administered questionnaires to ascertain what motivates them as teachers. By coming to understand what motivated teachers in

this area, education administrators may be better able to retain teachers for longer periods of time and may help them develop better support for their employees as well. The limitation of this study is that it is being conducted in a specific state and specific school district, which creates the possibility that motivation factors will not be representative of teachers everywhere.

Overview of the Following Chapters

The study consists of six chapters. Chapter 1 provided the problem statement, the purpose of the study, the research questions, significance of the study, and definitions of terms. Chapter 2 is a literature review emphasizing conceptual frameworks of motivational theories. The conceptual framework will guide the research. In addition, the literature review examines representative literature related to motivation theory, science education, and teaching in urban school settings. Chapter 3 describes the mixed methods used in gathering data addressing the research questions. It presents the research design, the population, sample, instrumentation, data collection process, and data analysis procedures. The study consists of six chapters In addition, Chapter 3 has a literature review of representative literature related to motivation theory, science education, and teaching in urban school settings. Chapter 4 described the method used in gathering data for this research. It presents the research design, the population, sample, instrumentation, data collection process, and data analysis procedure. Chapter 5 represented the data analysis and explained the data in the results. The last chapter concludes the study with discussion and conclusion.

Chapter 2

CONCEPTUAL FRAMEWORK

What is Motivation?

Motivation is a driving force that initiates and directs behavior. Motivation can be viewed as an internal energy that drives a person to do something in order to achieve a certain goal (Schunk, Pintrich, & Meece, 2008). It is what causes an individual to take action, whether to eat a snack to decrease hunger or go in college to receive a degree. The powers that lie under motivation can be biological, social, emotional, or cognitive in nature (Ryan & Deci, 2000).

Definitions of motivation differ because of the complexity of the concept. Many researchers defined motivation based on different discipline and/or theories. Gellerman (1963) emphasized that internal tensions were at the base of motivation, which he defined as

> "our speculation about someone else's purpose, and we usually expect to find that purpose in some immediate and obvious goal such as money or security or prestige" (190).

Yet the particular goals that people seem to be striving for often turn out, on analysis, to be instruments for attaining another fundamental goal. Thus wealth, safety, status, and all the other kinds of goal that supposedly "Cause" behavior are only paraphernalia for attaining the ultimate purpose of any individual, which is to be himself " (p. 190). In this case "causality" is not a push from behind, rather it is the human ability to posit a desired future state and pursue a variety of strategies to attain that state.

Hence, one question among psychologists is how motivation influenced behavior. There are several different types of motivation, based on the goal or end that motivates individuals. However, in the broadest sense, motivation can be categorized into two different types: intrinsic which refers to internal desires to perform a particular task and extrinsic motivation which refers to factors external to the individual and unrelated to the task they are performing (Ryan & Deci, 2000). In this regard, intrinsic motivation is the act of doing something because it is inherently interesting or enjoyable as opposed to extrinsic motivation that involves doing something because it leads to a separable outcome" (Ryan & Deci, 2000, p. 55). Intrinsic motivation results in improved achievement that it can be affected either positively or negatively by others within the context of one's achievement (see: Ryan & Deci, 2000; Deci, Koestner & Ryan, 2001, and Soenens& Vansteenkiste, 2005).

Extrinsic Motivation

Extrinsic motivation refers to factors external to the individual and unrelated to the task they are performing. Examples include money, good grades, and other rewards. Kohn (1993) defined it "as a way of doing things to individuals rather than working with them" (p.784). This view of management disregards one's ability to think and reason on one's own, not allowing individuals the chance to develop self-determination or independent thinking. Punishments or rewards are used to control the motivation of the teachers. Extrinsic motivation is also considered as the driving force for various activities

in people's life from education to the workplace (Schunk, Pintrich, & Meece, 2008; Ryan & Deci, 2000).

The different types of extrinsic motivation range from more common rewards such as money, recognition, awards and
prizes, status and opportunities to negative stimuli
including bribery, pressure, and punishment that have been utilized by men and women of all ages and sizes, and circumstances (Schunk, Pintrich, & Meece, 2008; Ryan & Deci, 2000).

Extrinsic motivation does not mean that a person will not get any satisfaction from doing or completing an assignment (Herzberg, 1989). It just means that the pleasure they predict from some external reward will continue to be a motivator even when they have little interest in the task to be done (Herzberg, 1989).

Finally, employees learn different kinds of behavior before and after taking a job, and they meet a host of stimuli at work place that can cause them to behave in certain ways (Roberts, 2006). Behavior is either rewarded or punished depending on their value to the work. Stimuli in the workplace include schedules, community structures, school policies, managers, and so on.

Intrinsic Motivation

Intrinsic motivation refers to internal desires to perform a particular task. People who are intrinsically motivated do certain activities because it gives them pleasure (Schunk, Pintrich, & Meece, 2008; Ryan & Deci, 2000). Intrinsic motivation means doing something for natural or personal satisfaction (Ryan and

Deci, 2000). Intrinsically motivated individuals respond to tasks that are perceived as fun or challenging rather than to external pressure or reward.

Intrinsic motivation is not the only form of motivation, but it is a pervasive and important one. It is part of human beings natural inherent instincts to grow in knowledge and skills (Ryan and Deci, 2000). In addition, intrinsic motivation lives within individuals, but also in relation between individuals and actions. Humans sometimes note intrinsic motivation as stimulating factor, while others define it by the satisfaction a person gains from the task completion (Schunk, Pintrich, & Meece, 2008).

The Self-Determination as Intrinsic Motivation

Social identity and concept of self are critical aspect of human social behavior. Many researchers promote goal-based theories, which broadly focused on identifying factors that serve to motivate people to work towards their goals and objectives. Deci and Ryan's (1985) theory of Self Determination is hugely relevant as it is comprehensive research that delves deeply into the various intrinsic and extrinsic environmental variables which can significantly influence one's actions. The theory focuses on the "Content" of motivation and how people determine their actions. It established that competence, autonomy, and relatedness further influence the way individuals pursue their goals. Deci and Ryan emphasized what the content could be and the examined the reasons for setting goals. Their theory mainly emphasizes the voluntary nature of human behavior, and helps understand the degree to which individuals participate in tasks and what motivates them to complete that given task. In Deci and Ryan's model self-

determined individual will actively tend towards psychological growth and development, and finish challenges, to achieve a clear sense of self, constantly seeking support from the local environment.

In various places, this theory has been called the "self-determination theory" (Deci & Ryan, 2000a; Ryan & Deci, 2000b, 2002), the "relative autonomy theory" (Ryan & Deci, 2003), and the internalization theory (Deci & Ryan, 1985). Brunetti (2001) used autonomy as a concept to study professional growth. He implied that professional autonomy reflected individuals' need for personal freedom to make decisions for personal and professional growth. Brunetti (2001) defined professional autonomy as an intrinsic reward providing high levels of career satisfaction. Bavendam further argued that employees are more satisfied when they have enough freedom while they are working in a certain job.

It is important that while need-fulfillment largely explains self-determination theory, supporting sub theories helped further in comprehending it. The four sub-theories of Self Determination Theory explored intrinsic and extrinsic motivations while considering the wider aspects of psychological needs for autonomy, competence, and relatedness. Causality orientation theory and basic needs theory, both sub-theories, gave interesting factual insights. However, they are not as applicable or relevant as Cognitive Evaluation and Organismic Integration Theory.

According to Cognitive Evaluation Theory (CET), social contexts create major motivations for individuals. CET broadly described tasks that are taken on

because people find them enjoyable and genuinely get pleasure from the time spent on them. At the same time, extrinsic motivation is driven by reward and recognition of individuals. It is important to note that many studies and meta-analysis have found that intrinsic motivations of rewards are considerably reduced with predefined conditions and adversely affect self-determination (Deci, 1971; Deci, Koestner, & Ryan, 1999).

Organismic Integration Theory (OIT), in contrast, refers to one's sense of self. In other words, it is the ability to comprehend one's actions and experiences. It not only identifies one's interest and capabilities but simultaneously integrates them with other aspects of one's self. OIT makes one's relationship with others more significant and satisfying. Deci and his collaborators found out that human interaction and sharing help integrate and organize complex experiences into meaningful social relationships. At the work place, for example, one is able to engage, interact, and organize information through constant peer interaction. Experiences and information are easily shared because of the process of internalization. Internalization facilitated understanding experiences and made extrinsic rewards redundant in the overall scheme of carrying out tasks. As such, the psychological need of relatedness provided the primary drive for internalizing values.

In Self-Determination Theory, internalization was viewed as a motivated *process*; internalization processes varied along an autonomy continuum. Beginning on the extrinsic end of the motivation continuum. *Introjected*

regulation meant internalizing rules so that one's behavior helps to maintain self-esteem and hide shame or guilt.

Identified regulation indicated acceptance of a rule as a free choice rather than as coercion. For instance, solving a math problem might not be enjoyable for most but it needs to be understood as important to go to the next level; *Integrated regulation* is fully-determined, because desired needs of the tasks are assimilated within the wider value set held by the individuals and therefore voluntary because it is accompanied with the goals of the self (Deci, Eghrari,, Patrick, & Leone,, 1994). It essentially meant that students, who may be on time for an exam, might be doing it not only to graduate to the next level, but because they want to succeed. Punctuality and professionalism corroborated with the inherent values and principles that guide the student's lives. These students tended to internalize their identities as "good students" and "professional" by integrating these values within their actions and behavior. Hence, individuals are fully self-determined when their actions are guided by integrated regulation.

Within STD theory, motivation was driven by a desire to satisfy basic needs. SDT suggested that people's actions are determined by three main needs:

- The need for autonomy, which means making one's own choices on issues concerning him/her;
- , the need for competence, which means exercising abilities or improving them;
- the need for relatedness, connecting with others or feeling socially valued (Ryan and Deci 2002,Brophy, 2004)

Self-Determination Theory is based on the assumption that people have innate tendencies to grow and develop psychologically, and to combine experience into self-concept (Deci & Ryan, 1985, 2000). SDT is a macro-theory of human motivation, personality development, and satisfaction (Ryan, 1995). The theory focused especially on self-determined behavior and the social and cultural conditions that stimulate it (Deci & Ryan, 1985). The focus of many SDT studies was on situations that tend to increase or decrease people's natural activity and enthusiasm. SDT proposed to explain components of personality and behavioral self-regulation through interactions between intrinsic and environmental elements within social contexts (Ryan and Deci 2000).

This theory held that a person's actions are self-determined if the person acts independently, regulates his or her own behavior, initiates and responds to events in a manner indicating psychological empowerment, and behaves in a manner that is self-realizing. That is, the person acts in ways that make positive use of knowledge and understanding about his or her own characteristics, strengths, and limitations (Wehmeyer, Kelchner, & Richards, 1996).

SDT focused on developing feelings of competence in individuals, leading to an enhancement of intrinsic motivation (Ryan & Deci, 2000, p. 59). Importantly, though, individuals have to associate their feelings of competence with a sense of autonomy, or self-determination, it is also true that individuals perceive a variety of things as external controllers of behavior, and that these reduced their sense of competence, relatedness, and autonomy. Ryan and Deci (2000, p. 60) review such examples as tangible rewards, deadlines, threats,

directives and competition pressure, showing that these aspects prevented or hindered the individual's sense of self-determination.

It is thus challenging to develop intrinsic motivation. Much human behavior stems from external motivations, due to social demands, externally produced rules (especially in schools), and the lack of intrinsically interesting activities in places of learning, or the workplace. The development of humans, then, could be argued to be dependent on intrinsic motivation not only in childhood, but throughout the life of an individual. This aspect of human nature directly affects "performance, persistence, and well-being across life's epochs" (Ryan & La Guardia cited in Ryan & Deci, 2000, p.55). This strongly suggests that life is primarily directed to satisfying the psychological needs for competence, autonomy and relatedness.

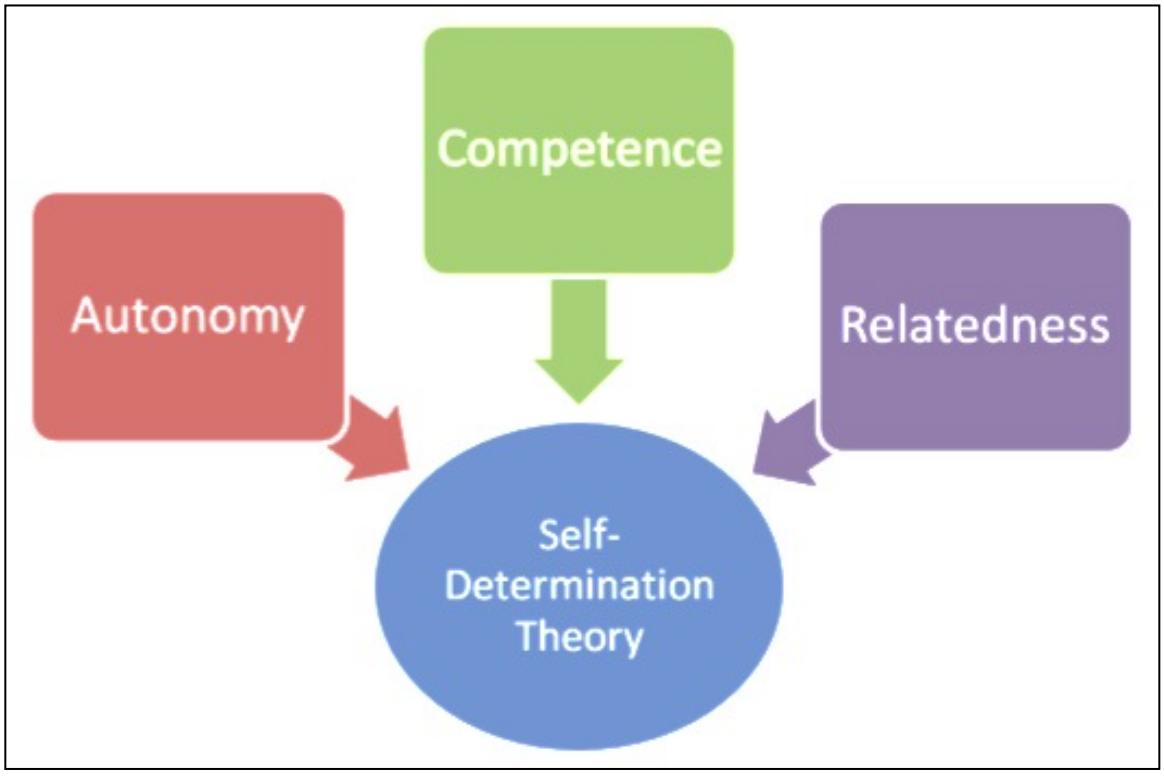

Figure 1 A diagram depicting the three elements of self-determination theory

According to Pintrich and Schunk (2002) autonomy is the degree of choice that individuals have about tasks and when and how to perform them. Brophy (2004) suggested that people experience autonomy when their effort is valued and encouraged. He also recommended that supporting autonomy could help in stimulating intrinsic motivation by understanding the learner's perspectives, increasing their plans, producing more chances for choice, and allowing individuals to work in their own way (2004).

There were two ways to define autonomy based on Ryan and Deci "being the perceived origin or source of one's own behavior" (Ryan & Deci, 2002, p. 8) and "volition and self-endorsement" (Ryan & Deci, 2003, p. 266). Deci and Ryan explained further,

> "Autonomous action is chosen when people experience themselves as initiators of their own behavior; they select desired outcomes and choose how to achieve them. Regulation through choice is characterized by flexibility and the absence of pressure" (p.125).

The historical background of autonomy emerged from personal causality by Heider in 1958 who wrote that personal causality implies "that the cause of an action comes from within the person" (1958; cited in Deci & Ryan, 1985, 437) this focus was on how people's attributes and actions relate to other individuals or the environment. The personal causality concept is similar to the concept of autonomy, but Deci and Ryan widened Heider's ideas about autonomy by adding it to situations beyond interpersonal relations and describing it as a basic

psychological need (Ryan & Deci, 2000b). Ryan and Deci (2002) defined autonomy in a similar way but with less technical language as "being the perceived origin or source of one's own behavior" (p. 8). In this sense autonomy involves whether one perceives that a behavior or action originated from within the self or from a source external to the self.

Autonomy. Autonomy was discussed in many studies under different theories. Ryan and Deci (2000, 2002) used the concept of motivation in developing their theory based upon the perceived autonomy (or self-determination) of certain behavior, or the level to which a person feels the behavior originated within himself.

Deci and Ryan (1985) considered that the degree of autonomy related to a behavior correlated with the internal motivation for that behavior. Thus, if a behavior is low in autonomy, the locus of causality is external, and the motivation for that behavior is external. However, if a behavior is high in autonomy, the locus of causality is internal, and as a result, the motivation is internal (Ryan and Deci, 2000, 2002).

Competence. Brophy (2004) defined competence as needs that can be met when individuals successfully deal with the environment to control things around them. For example, when teachers expect themselves to do well, they tend to try harder, persist, and perform better. Those teachers are much more likely to be motivated in terms of effort, persistence, and behavior than those who believe they are less able and do not expect to do well.

On the one hand, individuals need competence to feel successful in their achievement. On the other hand, controlling environments will likely employ extrinsic motivation, and competence alone will not be enough for intrinsic motivation. Competence plays a main part in motivation; when individuals feel competent in the workplace thus they are likely to feel more secure n choosing and carrying out any task. Many of the studies investigating the influence of competence on motivation have focused on how feedback influences self-determined motivation. Negative responses on surveys decreased of level of competence and intrinsic motivation, whereas positive responses were assumed to deepen the sense of competence and intrinsic motivation

Relatedness. Relatedness is the need to feel connected to others and to feel you are part of something, that you belong to a larger sial community (Deci & Ryan, 2000). Relatedness can sometimes be perceived as friendship because people want to feel accepted and supported, therefore, interaction with others is important, and it represents a need to belong to a group (Brophy, 2004). The desire for belonging reflects a need for connection to others, thus people feel more secure and composed when they are accepted in a group. The need for relatedness can be satisfied in the working environment when individuals are allowed to interact freely with peers without imposed limitations on who to interact with. Autonomy develops best in situations where individuals feel a sense of relatedness.

Related Research in SDT

Not only students, but also teachers, need motivation. The field of teaching has many responsibilities. Some of these responsibilities are not pleasant; thus, teachers need to be motivated to do these duties. It is necessary that teachers' motivation should be intrinsic more than extrinsic. Particularly in Western society external controls on teaching are extensive. These external controls, such as curriculum restrictions, impose standards and grade-related goals making it difficult for the teacher to find a level of intrinsic motivation. A fundamental concept in SDT is that improved achievement is directly linked to intrinsic motivation. Thus, it seems apparent that the means must be found to encourage more intrinsic motivation in teachers. As has been shown, this would positively affect the lives not only of teachers, but of students, too. However, recent developments in educational "reform", for example "teacher-proof curricula", pay for performance, "accountability", and the use of high stakes testing to measure both student and teacher performance move strongly in the direction of external controls.

Several studies employed SDT to enhance the understanding of employees' experiences within their work settings (Gagne & Deci, 2005). Two studies found out that there was a relationship between basic needs of satisfaction and the significance of occupational outcome variables such as performance and participation. Ryan & Deci (2000) identified motivation as one of the important characteristics that a teacher needs in order to remain in his or her classroom. They argued that teachers become motivated if they feel that they have

instructional knowledge, supported by the administration and belonged to a school community (2000). However, Ryan and Deci cautioned that there has to be a seed of interest before the social context has an impact. But once the seed is there, social context can make a big difference" (Deci & Ryan 2000, p.145). Shen (1997) added that the school, and more specifically administration, assist and support teachers to encourage them to teach with high levels of proficiency, belonging, and helpfulness because of the link between one's satisfactions on the job.

Structuring the choice for teachers in a way that their choices are more focused by interest supports ownership; Self-determination played a major role in enhancing feelings when support for selecting and planning activities was absent in individuals. Brophy (2004) noted that school districts structure and instructions that utilized choice rather than control increased feelings of self-determination in teachers. An earlier study Shin and Reyes (1995) found that teacher's job satisfaction was a major cause for a teacher's commitment to their school. In contrast, Birkeland and Johnson (2003) found that most teachers reported job dissatisfaction as the primary reason for school or leaving teaching profession.

On a more broad social scale, it has been shown that controlled regulation was associated with negative psychological consequences, whereas autonomous motivation produced high performance, well-being, and low burnout (Deci, Koestner, & Ryan, 1999). This is true of employees' motivation and thus autonomy-supportive behaviors such as provision of rationale, provision of choice, allowing criticism, encouraging critical thinking, and demonstrating the

value of a behavior were advised by leadership experts writing on management of the workplace (Gagne & Deci, 2005). Bono and Judge (2003) found that transformational leaders encouraged autonomous motivation for specific goals among their employees, and task performance and innovation were improved by this leadership style.

Applying this conceptual framework to teaching certainly proved effective in that interpersonal dimensions of autonomy support and relatedness significantly influenced the affective and cognitive outcomes of education" when adults fostered an inner motivation to learn. A reward-system of motivation – whether physical or verbal – was shown in a study by Deci, Koestner and Ryan (2001) to diminish intrinsic motivation in individuals. The advice of these writers was to develop more interesting learning environments and activities for children, "with the aim of ensuring that intrinsic motivation led to better creative task engagement, cognitive flexibility, and conceptual understanding" (Amabile, 1982, McGraw & McCullers, 1979, cited in Deci, Koestner & Ryan, 2001, p. 15). In addition, not all-external motivation is completely without individual autonomy. Identification with the personal perception of the importance of a behavior allowed the individual to accept a regulation as his/her own. Finally, integrated regulation described the full acceptance of an external regulation into the self. Thus, an extrinsic motivation was accepted completely as part of the self, and comes to operate as an intrinsic motivating factor.

Research in the field of Educational Psychology suggests that an autonomy-supportive teaching style has been shown to "improve school

engagement, higher grades and better school adjustment among adolescents" (Soenens& Vansteenkiste, 2005, p.591). However, strong psychological controls have been found to be related to increased depression, lower self-esteem, externalizing of problems, and to negatively affect students' academic performance (Schunk, Pintrich, & Meece, 2008). It is an ongoing concern of researchers and educational practitioners to develop ways of encouraging internal rather than external motivation in individuals.

Within the sphere of teaching, the major influence on teachers' levels of motivation is the principal's development of a clear vision, framed school goals, and attempts to seek staff consensus on desired outcomes (Barnett & McCormick, 2003) Vision statements set forth by the principal tended to offer potential personal goals for the teacher, and the belief that future change was possible. It is necessary that the vision be reflective of the needs and interests of the school community, and realistic, so that teachers will be prepared to sacrifice their own interests for the sake of the organization (Barnett & McCormick, 2003).

Summary

In the model of STD, people can benefit from conditions in which they are autonomous, feel competent and relate to their achievement. If teachers are motivated by intrinsic motivations, it is better to nurture the sense of their enteral needs rather than implement extrinsic rewards and punishments, performance in classrooms is likely to be enhanced.

Summarily, research has shown that motivation plays a significant role in developing personality and self-esteem of an individual; well-motivated person is

likely to work hard to achieve his or her goals (Deci & Ryan, 2000). In addition, leaders and institutions need to motivate their employees in order to attain desired objectives.

Chapter 3

LITERATURE REVIEW

Introduction

The following chapter constitutes a review and synthesis of research studies and articles pertaining to teaching in urban settings. In order to answer the research questions, it is important to review some of the theories describing the situation in urban school settings. Research that has already been done on the topic of teacher retention in general, and in urban high schools in particular, was reviewed to guide the present study.

Before I examine the issue of teacher retention, I will describe a number of background topics related to teaching in urban schools. The review, therefore, begins by describing the urban environment and urban schools. A brief history of the development of urban schools has been included as contextual background for the study. Efforts made to improve the conditions in urban schools, for example, passing the No Child Left Behind (NCLB) Act mandating standards-based reforms are also included. The challenges that urban schools faced has been described by several authors (Jorgensen & Hoffmann, 2003) and this helped to explain the factors that may contribute to the high turnover rate of teachers, especially science teachers, in urban schools.

I examined research on teacher turnover and discovered that the situation in urban schools was related to the factors for teacher turnover. This review will examine that literature in detail. The literature review will also examine factors that contribute to teachers' motivation to stay in urban schools despite the difficult

conditions. I hoped by looking at both the challenges and the motivating factors this study will be contribute to the understanding of teacher retention in urban schools.

Urban Settings

Urban schools in the United States are exposed to a whole range of challenges in the present age (Duncan & Murnane, 2011). Shortages of qualified teachers of all subjects in general, and science subjects in particular, especially in the urban schools in the United States, has increased dramatically in the past few decades. There is also inequity in education in the enrollment rates of students as well as the availability of teachers belonging to different races and ethnic origins:

> Equity is central to the current reform movement in science education. Although all students are capable of understanding and doing science, persistent and widespread differences continue to exist in students' access, retention, and achievement, depending on their culture, gender, race, and socioeconomic status (WCER, 2007, 44)

While this general statement applies to schools across the landscape from rural to urban, teachers and students are exposed specific challenges in urban schools.

Background of Urban Schools

In the United States, the education sector has been a major priority, with numerous efforts of reform being implemented to improve students' performance. Urban schools in the United States are located where there are relatively high rates of poverty. Frequently cities are also home to well-to-do families who chose to send their children to private schools – further concentrating poverty in the

public schools. Moreover, the urban student population frequently includes immigrant groups with limited English proficiency and is, therefore regarded as high need (Ruso, 2004).

Gaskell (2012) claimed that in the early years, wealth was accumulated by a small number of individuals and, as a result, poverty levels in the urban areas increased significantly. The diversity of the urban population in the United States increased as well, resulting in racism and ethnic inequalities – sometimes exacerbated by gender inequalities rooted in ethnic community expectations. One of the hallmarks of the metropolitan order is what we have come to call "diversity." The city encompasses groups of many different races and ethnicities, and as everybody knows, these groups are not evenly dispersed but clustered in what the sociologist Herbert Gans termed "Urban Villages" (Herbert, 1962). Given that, the local "neighborhood" structure of school meant that race/ethnicity and social class distinctly segregated schools. Thus the funding of schools for wealthy and poor districts remains fraught with inequality, frequently driven by the use of property taxes as a funding mechanism (Kozol, 1992, 2006). The urban schools in the United States have, over the years, faced a declining level of test scores and high rates of violence. According to Stark (2011), urban schools in the 1800s were started with an aim of providing immigrant parents with affordable places for their children to stay during the day, as they worked in mills, factories or shops. By 1920, urban schools served middle-class students, who aimed for white-collar jobs.

Aikenhead (1996) believed that circumstances played a key role in the development of science education, such as The Second World War, atomic bomb due to which the military turned small science to a big science project. Aikenhead drew a time line for his readers to imagine the status of science curriculum at that period of time. At that period of time, it was obvious enough that teaching science was not for everyone, but more for a certain class of people (Kozol, 1992; Aikenhead 1996). Aikenhead talked about reforming that Dewey was calling for which had taken place in the late 1950s (1996). Nevertheless, the years 1955-1974 were called the Golden Age in Education. The reforming mostly took place in schools that served high SES community with the absence of civil rights from the 1930s to the 1960s (Kozol, 1992).

On another note, Oakes, Tor, Robert & Camp, (1990) focused on racial matters that caused a lack of improvement in science education. In summary, the report stated that: a) poor areas have average teachers who did not care about teaching science in their classrooms. b) Low SES students attended public school in big cities with limited supplies for science, and c) Minorities and low SES students attended high schools with no encouragement to take science because of to the poor background in earlier grades leaning science.

Even though the civil rights movement existed into 1960s and 1970s, the construction of discrimination and social classes continued in American society. Those two matters had a great impact on education in general and science in specific. Rich white people get good science education while the poor students were left behind (Oakes, Tor, Robert & Camp, 1990). A particular poignant

example is found in Kozol's discussion of a science class in East St. Louis, where in the shadow of a huge chemical plant, a poor Black school had virtually no equipment with which to teach chemistry (Kozol, 1992).

Teaching programs needed improvement. There was also shortage in the number of teachers in key subjects especially mathematics and science (Oakes, Tor, Robert & Camp, 1990). As a result, the education sector was at risk and reform was urgently needed to improve conditions in American schools.

The Improving America's Schools Act of 1994 was passed, and its aim was to improve education for disadvantaged students by helping them access better educational facilities and improve their academic performance (Jorgensen & Hoffmann, 2003). However, "the Act focused, not just on disadvantaged students but on all American children, providing high standards for learning" (Jorgensen & Hoffmann, 2003, p.4). By 2000, most states had succeeded in developing academic standards and students' performance was improving. In January 2002, President George W. Bush approved the No Child Left Behind Act (NCLB), which sought to bring about accountability by emphasizing achievements of students from kindergarten through high school.

NCLB Act sought to implement parent involvement, accountability, and "local control as strategies for improving the performance of students and schools" (Jorgensen & Hoffmann, 2003, p.6). The NCLB Act required that high instruction standards be set, and testing employed, to track students' performance. Each state is also required to assess third grade to eighth grade in mathematics annually, and make public the results in order to easily track every school's

performance. The Act supported instructional programs, indicating that the government would provide funds to support teachers in gaining effective skills in instructional techniques (Jorgensen & Hoffmann, 2003).

Impact of 'No Child Left Behind Act' on Teachers:

As I mentioned earlier, urban schools have been in existence for about 150 years in the United States. They were started as affordable places where low-income earners could leave their children to be educated as they worked during the day. However, the educational quality of these schools has always been problematic; they possess low-quality facilities that are unfavorable for learning and frequently un or under qualified teachers. In recent years, at least since the 1950's, urban schools have been plagued with violence. As a result, academic performance has suffered. The NCLB Act was implemented with the aim of improving the performances of these schools and the overall education system. The Act has been able to improve students' performance, to a certain extent. However, many urban schools continue to lag behind. NCLB, has therefore criticized for not addressing the main cause of students' poor performance, and for not providing sufficient funding. The children in urban schools are mainly from poor backgrounds; they did not receive adequate care or encouragement either from the school or from parents. Moreover, they have had to cope with poor facilities and unfriendly learning environment in these schools (Kozol, 1992).

The NCLB has had both positive and negative impacts on students and teachers. Though the Act has been somewhat effective in measuring students' performance in schools, it has caused the majority of schools to focus on a single

test, which is not relevant. Needless to say, the Act emphasizes math and science (and language arts), often to the neglect of other subjects like civics and history. It discounts the fact that students need to improve all round performance academically. According to Whitney (2004), the main challenge that teachers faced on the implementation of NCLB was to ensure that students were proficient in reading, science, and mathematics. The result of the school would mostly affect the teachers, forcing them to use different kinds of techniques to ensure progress in students.

According to spell it out first DSA (2012), the NCLB Act is failing, especially in low-income schools, because teachers remain overworked; they have to deal with kids with disruptive tendencies, from dysfunctional families, and struggling with the everyday reality of poverty. To make things work, most of them are in need of support from social services and frequently proper parental guidance is absent. In addition, the remedial skill-based curriculum contributes to frustration and lack of motivation among students. The NCLB ignores the main reason why children fail. It may measure the students' capability to read. However, it does not assure adequate preparation for college admission (Knaus, 2007). NCLB has also influenced teachers' qualification by stipulating that they to obtain a bachelors degree in their specialization.

The Act also holds the teachers accountable for the students' performance, ignoring the efforts made by a teacher. Thus, if a student fails due to his or her incompetence (or issues ranging from family instability to abuse, hunger, and gang violence), even despite the best efforts from a teacher, the blame falls on the

teacher. Many of the goals are unrealistic most of the time. Knaus (2007) added that, NCLB encourages teachers to leave low–performing schools, which happen to be poor urban and minority schools in most cases. This, in many cases, is a cause of high teacher turnover and deprives students in such schools from getting quality education. As a result teachers that choose to stay are pushed to the edge, and they end up being overworked in order to achieve the goals purported by NCLB. Teachers are also placed in a disadvantageous position, since they need to keep their jobs, but the NCLB Act requires them to focus on a single measurement of achievement.

Back to The Problem

Currently, there is a sense of hopelessness in the urban schools, contributing to high levels of dropouts. According to Kincheloe (2006), teaching and learning practices in such schools do not value or encourage students' performance. DSA (2012) added that quality education is a right for all American students and, therefore, fairness and equality should be observed in urban schools. These schools experience multiple challenges while even while struggling to create and maintain optimistic and encouraging learning settings. Tobin, Roth, and Zimmerman (2001) suggested that the United States is still in the middle of a crisis as urban schools experience numerous barriers in meeting the needs of students whose characteristics become more diverse with each passing day. Urban education has been the main target of school reform and it continues to be the most complex issue to evaluate and modify in the area of educational reform.

The problems associated with urban schools are overwhelming and their crisis reflects many of the issues found in large cities. The main concern is the low socio-economic status of families. Besides underfunded schools, political struggles also contribute in worsening the problems (Darling-Hammond, 2003). Teachers have to face issues such as low student test scores and grades, high student dropout rates, poor attendance, large class size and complex working conditions, besides loose mentoring and evaluation systems, old salary systems and generally uninterested students (Pianta & Walsh, 1998; Tobin, 2000). In addition, teachers may endure ineffective administrations, insufficient and imbalanced funding, lack of planning and collaboration time for teachers, and an endless series of reforms that never seem to lead to real improvement (Hess, 1999; Tobin, 2000). Teachers also have to cope with overloaded classrooms, old buildings, lack of resources, and unsupportive urban districts (Lynch, 2000). Schools in urban settings reflect the poor conditions of the society that surrounds them.

The differences in tangible resources in urban schools, as compared to suburban schools, are great. In his research, Aikenhead (1996) stated that a large number of urban schools were using temporary buildings, compared to suburban schools, and some teachers in urban schools reported that they did not even have their own classrooms because of lack of space. Teachers in urban settings, also risked going into unknown fields, or to use Aikenhead's term, were employed in "cultural border crossings" as they enter their schools because they were from a different culture or socio-economic status than their students (1996).

Teacher Turnover:

Teachers come to their early teaching experience with different backgrounds, motivations, experiences, and preparation levels (Smith& Ingersoll, 2004). Their understanding of the profession and their role in it is shaped by their motivations, as well as by the setting in which they begin their work (Darling-Hammond, 2000).

Ingersoll (2001) examined teacher turnover using the Schools and Staffing Survey (SASS) and the Teacher Follow-Up Survey (TFS). In his study, he found that among the 13.2 percent of teachers who were part of turnover per year, approximately half left the profession and half changed schools (2002). Ingersoll categorized the reasons for teacher turnover into three main domains: "teacher characteristics," "school characteristics" and "organizational conditions" (2002). According to Ingersoll, school characteristics were outside the control of policy compared to the organizational conditions, which were determined by policy and administrator (2001). He highlighted organizational conditions and noted that turnover was very high when salaries and organizational support were low (2001).

Each year, many teachers enter a teaching career, only to leave a few years later (Ingersoll, 2001). Although some teachers stay until retirement, others leave early for many reasons, including the teaching environment and personal reasons (Ingersoll, 2001). Administrators in urban schools can also contribute to attrition by not being aware of, or valuing high-quality teachers (Brumberg, 2000).

All these problems reported about urban settings may cause teachers to have negative attitudes toward teaching in urban schools. First, quality candidates

may not consider employment opportunities in this setting. Second, if teachers are employed to work in an urban school, the negative attitudes they hold may adversely affect the instructional opportunity they offer their students and/or cause teachers to leave urban districts to join suburban districts (Darling-Hammond, 2000). Among the reasons discussed in teacher turnover research, many are related to conditions in urban schools. Stressed or ineffective teachers, who worry more about protecting their jobs than helping students, are common in inner city school districts (Darling-Hammond, 2003).

Many urban schools currently face shortages of teachers in science and technology-related fields. Part of the problem lies in the lack of properly qualified teachers entering teaching the field as science teachers. Besides, the high level of anxiety and exhaustion among science teachers increasing the rate of attrition, also contributes to the shortage (Shen, 1997). The percentage of uncertified science teachers, who are ill equipped to fulfill their responsibilities in the school is increasing. "The science teachers are among the least qualified and those who are certified often teach out of their area of expertise" (Lynch, 2000, p. 4). The spell it out first NCES report published in 2002, mentioned that 31 per cent of the science teachers and 37 per cent of the math teachers in high school are either uncertified or lack a major (Miller & Chait, 2008).

Also, many people consider teaching as an occupation of last resort due to the extra workload and low income (Tobin, Roth & Zimmerman, 2001). Those who acquire good grades in college science will choose other science careers rather than teaching (Tobin 2000). Science teachers in urban settings remain

dissatisfied with their salaries in most cases. The study by Darling-Hammond (2003) about mathematics and science teachers found dissatisfaction with lower-paying jobs within the teaching profession. Science teachers with the strongest preparation in science who elected to teach in a high-need school had the highest stress rate. This usually becomes the reason for leaving the job before they had completed their third year of teaching (Brumberg, 2000). In addition, science teachers can find other careers with better salaries, requiring less effort (Huling-Austin, 1986). Another study found that teachers who have more scientific knowledge are more likely to reject the idea of teaching, or to quit teaching after a short period of time to take up other professions (Shugart & Hounshell, 1995).

Finely, in many cases professional development as a solution has not been effective in achieved school improvement. Here also, the main reason for this appears to be the high rate of teacher turnover. Guin's (2004) reported that those teachers who participated in the study viewed professional development as repetitive and a waste of time. Reichardt and Guarino (2000) found that even teachers who attended valuable staff development requiring heavy investments in low-performing schools frequently quit teaching subsequently, or moved ahead to teach in higher SES school areas.

There appeared to exist a whole range of factors that demotivate teachers in general and science teachers in particular from continuing with the profession. While teachers receive only low salaries, the job is extremely demanding both in terms of time and physical as wellbeing and in the emotional stress it entails. The most unfortunate aspect of the job of teaching is the fact that a teacher is held

wholly responsible and accountable for the behavior and results of students. The profession of teaching is taxing, which prevents a teacher from attaining a balance between his or her personal and work life. There are also instances where many of the teachers are not even certified to be eligible to do the job they had been assigned. School administrators are willing to offer jobs to such incompetent teachers because they can reduce the expenditure on salaries. With all these challenges, the profession of teaching has lost its appeal. The problems that have surfaced are not matched with equivalent increases in salary, which further prevents professionals from entering this field. Consequentially, there is inequity in science education and the quality of education, as a whole, has deteriorated.

Persistence in Urban Schools

Many studies about teachers in urban settings, as mentioned earlier, focused on the negative side such as lack of qualification, poor performance, and burnout. However, for Haberman (1995), the case is different. He tracked teachers in urban setting since the mid 1950s and focused mostly on resiliency in teachers.

Haberman (1995) described resilient teachers in low SES urban schools as star teachers. These teachers are the ones who have high expectation for their students and manage to get the most from students regardless of their background (Haberman (1995). He further identified seven characteristics of star teachers of students who come from a poor background. These characteristics are persistence, energy, encouragement towards learning, employing useful theory and practice, developing a professional and personal relationship with students, the ability to deal with students at risk and the ability to admit to failure.

Haberman (1995) claimed that urban teachers for students in poverty are almost ten times more effective if the teacher is over thirty rather than under twenty five years of age. He reasoned that older teachers have a better vision about the circumstances of urban settings and, thus, are more capable handling teaching without burnout (Haberman, 1995).

Persistence is critical to develop teaching excellence. Haberman (1995) identified persistence as the first of fifteen "functions" of "star" teachers of children in poverty. Persistence may be important because this trait influences many additional factors related to effective teaching. These include: teachers' expectations for students, development of teaching skills, efficacy beliefs, response to setbacks, reflection, use of reform-oriented teaching practices, and responsiveness to student diversity. Whitaker, Whitaker, and Lumpa (2000) mentioned star teachers and added other two types. They further classified teachers as superstars, backbones and mediocre. These researchers stated that "superstars were difficult to replace because they were dedicated and effective; the backbones were solid hardworking teachers; and the mediocres are disgruntled and can be damaging to the morale of the school staff" (p. 19). The study, however, did not mention the reasons behind it. This classification scheme provided my study design especially in the qualitative section, the impetus to discover motivations as well as discouragements for experienced teachers to persist in teaching.

In another study, Bacolod (2007) focused on demographics of teachers, who choose teaching in urban settings. He found that female minority teachers

were more likely to choose urban schools than suburban schools in comparison to male minority teachers. Strunk and Robinson (2006) did a similar study about teachers' school choice. They found that teachers choose to teach in schools where the students and teaching staff reflect their own racial identity, probably because they may fit into the community better (Strunk & Robinson, 2006).

For my dissertation I do not intend to test a cognitive or behavioral theory of human motivation, but to use these theories as a framework to examine the reasons as to why high school science teachers remain in urban schools. As a guiding framework for this study, a combination of the factors emerged that influence teachers persistence: primarily years of experience and ethnicity. Sociologically, each of these factors plays an important role in the decisions an individual makes by shaping his or her episodic memory through a series of experiences and encounters with the socially constructed world (Davis &Palladino, 2000).

Teacher Identity

When teachers enter classrooms, they bring themselves, their life experiences, histories and cultures with them (White, Zion & Kozleski, 2005). Teachers' assumptions and beliefs can also project an image of what a good teacher should be (White, Zion & Kozleski, 2005). Besides, if teachers hold incorrect beliefs or assumptions about their students, these may lead them to stress and burnout (White, Zion & Kozleski, 2005) Hence, developing an identity for the teacher is important for increasing teacher's persistence and professional norms of practice (Hammerness, Darling-Hammond, Bransford, Berliner,

Cochran-Smith, McDonald & Zeichner, 2005). In their research on literacy and identity, Moje and Luke (2009) proposed that identities "are produced across spaces but also in the ways people are cast in or called to particular positions in interaction, time, and spaces and how they take up or resist those positions" (p. 430).

The research on teachers' thinking shows that teachers' beliefs about teaching do affect many aspects of classroom practice (Richardson, 1998). For instance, teachers may hold false beliefs that were influenced by stereotypical views about their students' ability in mathematics and science. Atwater (2000) suggested that race and socioeconomic status are an "apparently potent source of input into teachers' expectations of their students" (p. 193). Therefore, teachers' views about their students might impact their instructional judgment as well as the kinds of social environment they create in their classrooms.

Consequently, the person's beliefs about his or her self, profession and surroundings give hints about teacher's identity development. Exploring personal beliefs is important in distinguishing between what is known and what is believed. In the context of this study, beliefs are important not only because of their close connection with identity, but also because of the nature of the beliefs that people bring with them into the teaching field.

Our identities are complex and a mixture of many portions. Sociocultural theory implies that identities are constructed through different experiences such as time and location, social connections, gaining knowledge, and experiences of learning, among others (Moje & Luke, 2009; Ensign, 2003; Gee, 2000). These

experiences are major elements that shape and reshape our beliefs. Gee (2000) claimed that humans hold a core identity‘ which expresses itself when other individuals involve in different discourses. Gee (2000) added that

> “When any human being acts and interacts in a given contexts, others recognize that person as acting and interacting as a certain kind of person‘ or even as several different kinds at once” (p. 99).

He further argued that individuals have and maintain many identities that are connected to their performances and behavior in the society.

While it is hard for people to change the culture into which they were born and raised, they still can achieve an understanding of their own culture and the culture of their students and then establish a social connection between the two (Delpit, 1995). In teaching, the word “culture” means how teachers understand their expertise and beliefs and relate this understanding to the local community of the students in their classrooms and or schools (Ensign, 2003). Nevertheless, anthropologists used the term “cross-cultural,” to explain the viewpoint of psychological phenomena in a comparative context across diverse ethnic groups in the United States (Gibbs &Huang, 2003). Yet, teachers who experience across cultures are the ones who teach students of a race, social class, or ethnicity other than their own (Delpit, 1995). Race and ethnicity will be discussed in detail in the following paragraphs.

Teachers’ Ethnicity:

Most students in urban schools are from racial and/or linguistic minority groups, whereas teachers continue to be mostly White and female (Pang &

Gibson, 2001; Rong & Preissle, 1997). The National Education Association (2007) reported that more than 38% of schools across America do not have teachers of color in their classrooms. Evidence also suggested that training suburban individuals to teach in urban school environments is not easy. Delpit (1995) noted the lack of knowledge, skills, personalities and experiences among white teachers, which are essential to teach ethnically and linguistically diverse students. On the other hand, teachers who studied culturally responsive courses were more confident and effective in dealing with diverse students (Pang & Sablan, 1998). Another study suggested that teachers enrolled in multicultural course were more likely to accept cultural differences (Irvine, 2003).

Ingersoll (1999) found that in 1995, minority teachers had turnover rates in urban schools that were 20 % and 18 % higher, than for Whites, which was puzzling. Ingersoll and May's (2009) analysis supported the previous data because they have found that 19.3 % of teachers of color changed schools or left the profession during the 2008-09 school year, compared to 15.6 % of White teachers. Ingersoll (1999) concluded, "the minority teachers are not more likely than white teachers to stay in those tough places," (p.34). Ingersoll (1999) further added that teachers were more likely to get jobs in urban settings, but when it comes to the decision to leave, the demographics seem to be insignificant. Teachers appear to be reluctant to be assigned to the classes of children of color, perhaps because of certain preconceived notions. Therefore, there are only few teachers willing to teach such students. At the same time, there also exists a dearth of teachers of color (Miller & Chait, 2008). The fundamental cause of this is that

the current curriculum, design and pedagogy of the American educational system are biased towards Caucasian Americans and the people of color lack equal representation (Goodwin, 2007).

Years of Experience:

Teacher experience is the number of years a teacher has taught in schools. Inexperienced teachers frequently get jobs in the most challenging schools because openings usually occur in such schools. They encounter severe problems there and with little support, they end up suffering from exhaustion and burn out in a few years. This causes a large amount of attrition and turnover in urban schools. While new teachers with the latest ideas are essential to improve teaching effectiveness, experience always matters in teaching (Huang & Moon, 2009). Research clearly showed that during the first seven years of teaching, each year of experience improves teachers' proficiency and effectiveness (Huang & Moon, 2009). The National Board for Professional Teaching Standards (NBPTS) certification found that many teachers were still in the stage of gaining proficiency and improving their effectiveness after an average of 11 years of teaching. But the problem is that they are less likely to teach lower levels or stay in urban schools (Huang & Moon, 2009). Thus, it is more likely that students with low performance will face double disadvantage and be taught by less experienced teachers (Huang & Moon, 2009.)

Moreover, Huang and Moon (2009) found that there was a positive correlation between years of teaching experience and student achievement. Although student gains per year tend to drop after 21 years of teacher experience,

the decline was such that a teacher at 30 years at the same grade level is still performing at a level of effectiveness that is higher than the performance of teachers during their first ten years.

Summary

This review of the literature examined the situation for teachers, particularly science teachers in urban high schools. The existing literature has been explored for theories and research studies that addressed the factors that contribute to teachers' persistence and the reasons why they remain teaching in urban schools. A number of factors have emerged that affect the situation in urban schools.

Before examining the factors that affect the teachers, the situation that urban schools face was also reviewed. The literature presents some history of the development of urban schools before outlining challenges prevalent in these schools. Urban schools are first described as schools that are located in areas of high poverty and in which the student population frequently have limited English proficiency. The low socio-economic status that exists in urban school districts has also had a profound effect on the conditions in these schools. With increasing poverty and a lack of resources, racism and inequality exists on an escalated level in the schools. The challenges in urban schools have led to a shortage of qualified teachers. This is especially so in the case of science teachers. Even the passing of the NCLB Act has not had any significant effect in improving the situation in most urban schools.

Teacher turnover is a particular problem in most urban schools. Negative reports about urban settings have discouraged properly qualified teachers from taking teaching jobs in these schools. The high level of stress and exhaustion experienced in inner city schools also result in high teacher turnover. Despite the negative factors, however, there are some teachers that remain in the urban schools, and they are motivated to provide quality education. The literature also reviewed some of the teacher qualities that motivate teachers to teach in urban schools.

Chapter 4

METHOD

Chapter four described the method employed in the research. The chapter was divided into two parts to cover both the qualitative and quantitative approaches of the research. The last part of the chapter explained the data analysis.

The first part of the research question examined science teachers' perceptions of their motivational influences as they related to their beliefs about themselves, and their work environment. The second part of research looked into urban science teachers' identities through in depth interviews. Therefore, this study was based on a mixed-methods design.

This study is guided by the following questions:

- Are science teachers in urban setting intrinsically motivated to persist in urban schools?
- Do years of experience/race affect science teachers' motivation (autonomy, relatedness, and competence)?
- How was the decision to stay affected by the science teachers' practice and identity?

The mixed method design employed two data collection methods: survey, and interview. Conducting a survey allowed me to capture information about the entire group of science teachers in urban settings. Then, I followed up with eight of the survey respondents through telephone interviews, which allowed me to learn more about the persistent teacher in urban schools. Using the survey data to

represent trends with descriptive statistics and interview data to clarify what individual participants' answers meant in practice, I was able to provide brief synopses of each area I studied.

Survey

Participants

The selection of the sample was based on the definition of urban schools in chapter one which states that urban schools are the schools in high-poverty areas and serve students of low-socioeconomic status (McKinney, Berry, Dickerson, & Campbell-Whately, 2007). The sample for this study consisted of (n=194) science teachers who were currently teaching in urban middle andhigh schools in Arizona and California. The two reasons for choosing schools were race and the SES of students in these schools.

In the beginning, the Institutional Review Board (IRB) reviewed and approved conducting the study including consent forms (Appendix C), Surveys (Appendix A), and interview questions (Appendix B). School districts in both Arizona and California were contacted after the approval of the study. School districts were emailed an overview of the study, survey and interview questions. I also asked school districts to provide me with the science teachers' email addresses after they approved the study. After obtaining the approval from districts, schools were contacted and informed about the study. Schools were the main source to provide me with the science teachers' email addresses.

Teachers were emailed an overview of the study, consent form and the link to the survey in the fall semester of 2011. The study was based on a self-

selected volunteer sample. In the consent form and in the beginning of the survey, I stated that only teacher with five years or more were eligible to participate in the study since the target was to focus on stayers. At the end of the survey, teachers were asked to provide their email address so that the researcher could contact them for a follow up interview based on their responses. In order to encourage teachers to participate in the study, a ten-dollar gift card reward was mailed after completing the online survey for everyone participating and providing their email address. The teachers who did not respond the first time were emailed a reminder after two weeks in order to increase the sample size. The data collection for both quantitative and qualitative data started the last week of September 2011 and ended in the beginning of January 2012.

Of the 94 participants there were the following:

- 62.8%, or 59 respondents, were females, with 68.1% of the total having indicated White/Caucasian ethnicity;
- 43.6%, or 41 participants, indicated having 5 to 10 years of urban school teaching experience,
- 20.2%, or 19 participants, have 11 to 15 years of experience; 34 participants,
- 36.2%, selected a general response, indicating more than 15 years of teaching experience.

The distribution may or may not indicate a demographic bias in the sample.

Rights of Participants and Schools

The privacy of the participants is the responsibility of any researcher (Neuman, 2003). The information from the participants in the survey did not contain names or identity. For confidentiality, the data did not reference any individual or specific school. However, the survey asked teachers to provide their email addresses for two reasons. The first was for sending gift rewards to teachers, and the second was to contact teachers for a follow up interview. The data were stored in a locked file cabinet. My committee and I accessed the data. The data will be kept in a locked cabinet for one year, and then it will be destroyed either by shredding or deleting from my personal laptop. Teacher and school names and background information will not appear in the study.

Measures

The primary source of survey instruments was the website of self-determination theory (http://www.psych.rochester.edu/SDT/index.php). The STD website gave a summary of the theory and offered resources, publication, and questionnaires that addressed important issues such intrinsic motivation, development, and motivation across cultures.

On the self-determination website, Deci and Ryan posted sets of questionnaires to assess different concepts related to the SDT. There was a separate page for each questionnaire. Each questionnaire page has a scale, a description of the scale, a key for the scale, and references for articles, which used the scale. Deci and Ryan gave the permission to use any questionnaires on their website for the purpose of research only. The surveys asked for demographic and

Likert scale responses. A Likert scale was used to indicate how an individual feels about something and includes a range of possible answers (Dimsdale & Kutner, 2004). Twenty-nine Likert scale questions were used in each of the two domains: years of experience, and ethnicity, measuring choices of 1- not at all true, to 7 – very true.

Based on the conceptual framework the appropriate surveys were: a) the (IMI) Intrinsic Motivation Inventory, and b) Learning Climate Questionnaire (LCQ) surveys. Both surveys served in exploring autonomy, competence and relatedness, which was the main focus of the conceptual framework. Questions on the survey assisted in determining whether (a) years of experience, and (b) ethnicity was related to the motivation of science teachers to stay in urban settings

The IMI is a multidimensional measurement instrument to assess participants' personal experience related to a specific activity. The IMI consisted of wide-range of items on subscales that are coherent and constant across a variety of tasks, conditions, and settings. It has been used in many studies related to intrinsic motivation and self-regulation (e.g., Ryan, 1982; Ryan, Mims & Koestner, 1983; Plant & Ryan, 1985; Ryan, Connell, & Plant, 1990; Ryan, Koestner & Deci, 1991; Deci, Eghrari, Patrick, & Leone, 1994). The IMI subscales that were used for this study were perceived competence and relatedness. Both scales were modified slightly to fit the specifics of this research.

The second set of questions used was from The Learning Climate Questionnaires (LCQ). LCQ is a family of questionnaires consisting of four

scales, each designed for various settings. The LCQ adapted by Williams and Deci (1996) from the Health-Care Climate Questionnaire (Williams, Grow, Freedman, Ryan, & Deci, 1996). The instrument used in this study is designed for teachers to assess the quality of the working climate or the social contexts influencing motivation. Specifically, it measures how teachers perceive their administration -as autonomy supportive rather than controlling. Interpretation of the data is used to assess how science teachers perceive their autonomy in urban settings.

The three subscales in the survey were assumed to help probe into the subjective aspects of user experience in teaching science in urban school.

The validity and reliability of the WCQ has been established through its use in several experiments related to intrinsic motivation and perceived autonomy by Deci and Ryan (2000). Additionally, Baard, Deci and Ryan (2004) conducted a study to examine the validity of the Climate Questionnaires and found strong support for its validity. The validity and reliability of the IMI has been established through its use in several experiments related to intrinsic motivation and self-regulation conducted by Ryan (1982). Additionally, McAuley, Duncan, and Tammen (1989) conducted a study to examine the validity of the IMI and found strong support for its validity.

The survey contained varied item numbers of subscales, all showing themselves to be stable across a collection of settings, conditions, and tasks, as well as being analytically coherent factor wise. Generally, the criteria for item inclusion include a factor loading of approximately 0.6 on the subscale with cross

loadings more than 0.4 being absent. However, loadings for this study exceeded this. The items of the IMI have been slightly modified to fit the survey.

The IMI and WCQ questionnaires used in this study had the advantage that both validity and reliability have been tested in other research, which add credibility and safety to researches to use it.. The validity and the reliability aspects of both questionnaires used in this study was also supported by the use of redundancy through providing a minimum of two or three items per each criterion tested. Furthermore, the use of multiple items as opposite to single items for each measure added to a high level of external validity.

In-depth Interviews

The process for the selection of participants for any qualitative study must be "purposeful" (Creswell, 1998) with "set boundaries" (Miles & Huberman, 1994). In order for the selection to be purposeful, a narrow range of sampling strategies was used. In the second part of the study, I depended on the survey to identify who to follow up with an interview. The higher the score for any given subscale, the higher the likelihood that this particular criterion or subscale influenced the teachers' experience when teaching in an urban school. Conversely, the lower score on any subscale the lower the likelihood that the factor influenced teaching in urban school.

This section served in answering the second question of this study: how was the decision to stay affected by the teachers' practice and identity? The main purpose of the interview was to produce a list of reasons for persisting in urban settings from a motivational perspective.

Participants

Teachers who scored high on the survey and gave the permission to be contacted were emailed for a follow up interview consent form, explanation for the follow up, and a phone number to contact me. Teachers who did not respond to the first email were emailed again two weeks after the first email. I arranged a schedule with teachers to make the phone calls. Thirty-eight teachers agreed to follow up interviews but only fifteen of them scored high enough on the survey questions. Of the fifteen, only eight teachers respond to my emails and agreed to be interviewed. In the beginning of the phone call, teachers were given a brief explanation about the study, and the interview process. The open-ended interviews ranged from 40-45 minutes in (Appendix B). Teachers were asked questions about their identity and their social interaction in urban settings. More details about the interviews follow in the next few paragraphs.

The interviews were audiotaped and I took notes during the interview in order to ensure clarity of the participants' responses. At the end of all interviews, I transcribed the interviews. Teachers who volunteered for the interview were rewarded with an additional 20 dollars sent via email.

The following table 1 has general information about the teachers who were interviewed. Teachers were given pseudonyms for the purpose of confidentiality. Five out of nine teachers (55.5%) were Caucasians. Two were Hispanics, one was from India, and one was Asian American. Five of the teachers taught at middle schools and the other four taught at high schools.

Table1. Participants

Teachers	Race	Experience Yrs.	Area of Concentration	Grade level	States	Gender
1.Samadi	Caucasian	16 Yrs.	General	7^{th} & 8^{th}	CA	Female
2. John	Caucasian	22 Yrs.	General	7^{th} & 8^{th}	AZ	Male
3. Mary	Caucasian	8 Yrs.	Biology	9^{th}	CA	Female
4. Fred	Hispanic	12 Yrs.	Physical	10^{th} & 11^{th}	AZ	Male
5. Glenn	Caucasian	11 Yrs.	General	7^{th} & 8^{th}	CA	Female
6. Edward	Hispanic	6 Yrs.	General	6^{th} & 7^{th}	CA	Male
7. Pat	India	18 Yrs.	General	8^{th} & 9^{th}	CA	Female
8. Rosa	Caucasian	20 Yrs.	Chemistry	11^{th} & 12^{th}	AZ	Female
9. Katei	Asian	7 Yrs.	Biology	10^{th} & 11^{th}	CA	Female

Interview Protocol

In-depth interviews are useful when we want detailed information about a person's thoughts and behaviors or want to explore new issues in depth. Interviews are often used to provide context to other data offering a more complete picture of what happened and why. It also provides the complex documentaton of how people experience an event. The interview can add information about the "human" side of an issue such as behaviors, beliefs, opinions, emotions, and relationships of individuals.

The in-depth, semi-structured interview instrument consisted of questions intended to explore viewpoints about science teachers who stayed in urban settings. The conceptual framework of the study was the guide for emerging themes of the questions. The conceptual framework in the second chapter was the lens for data collection and analysis. The usefulness of the interview depends upon the type of questions that will be asked. In the case of this research, the interview questions were formed based on the SDT theory and the literature review (see appendix A). Some questions were about the support perceived from the community around them. Other questions were about the way teachers see, define, and explain themselves and their practices as science teachers in urban settings. To establish trustworthiness, a) participants were part of reviewing in the form of members checking the interpretation of data analysis and the way I represented them in this study. I also added some quotes from respondents throughout to add credibility to the information.

Categorizing and Coding

In order to keep teachers' identities confidential, numbers instead of the participants' information were used in all interview transcripts. Teachers were also giving pseudonyms. I read the interviews highlighting terms that were said by teachers in their interviews, to create categories for coding. After coding each interview, similarities in content and categories were classified. Utilization of a specific code or term was based upon what the data suggested. Redundancy of categories was eliminated.

Chapter 5

DATA ANALYSIS AND RESULTS

Quantitative Results

Once all data was collected, they were imported into SPSS (Statistical Package for the Social Sciences). SPSS was used for the quantitative data analysis. Three kinds of statistical analysis were conducted: descriptive statistics, one-way ANOVA, and linear regression.

First, descriptive statistics was used to describe the basic structures of the data. It helped to give an overview of the sample and the measures, such as demographic characteristics of the survey participants and the general distributions of surveys. Descriptive statistics were used to measure the group level response to each subscale. The mean, mode, range, variance, standard deviation, and confidence level were all calculated using Excel for each subscale for all the respondents.

Next, in order to answer the first question "Do years of experience affect science teachers' motivation (autonomy, relatedness, and competence), and did it cause the persistence in urban settings?" (SPSS) version 19.0 was used to compare the difference in autonomous support among the demographic variables considered for this study. These independent variables were years of experience and race. The dependent variables were the scores on the IMI and WCQ to see if there were staying preferences by ethnicity, and years of experience. For questions on the survey, a one-way analysis of variance (ANOVA) was used. A one-way ANOVA was the preferred method of analysis for this part of the

research because it allowed for testing of means achieved by two or more groups and was a very useful approach for examination of causal models with predictor variables. An alpha level of .05 was used for each statistical test.

I did not know for certain if the variables examined were what actually caused the sample population to stay in their school. The focus was exploring the relationship that could exist between these variables. However, the higher score for any given subscale suggests that there was a greater likelihood that this particular subscale was influencing teachers' experience when teaching in an urban school. Conversely, the lower a score on a subscale the lower the likelihood of influence on teaching in an urban school.

The descriptive statistics for each of the three dependent variables, the scale-based estimations of relatedness (R), competence (C), and autonomy (A), are presented in Table 2. The table presents response ranges as well as the central tendency and dispersal statistics. The general results may indicate the relatively low level of community relatedness, moderate self-reported competence and perceived autonomy support by authorities within the study sample as a whole. These results may be confirmed by descriptive data for each of the scale questions, presented in Table 3, which provide a reliable ground for a discussion. The reliability of the scale was estimated using Cronbach's alpha, with the result of .92 for 29 items, which is very high according to the existing estimates (Bland and Altman, 1997). Additionally, correlation coefficients for pairs of dependent variables were estimated, with a highly significant ($p<.01$) result obtained for

relatedness-autonomy support variables pair, R= .28. Correlation coefficients for other pairs did not reached statistical significance.

Table 2. Descriptive statistics for intrinsic motivation scale scores

	N	Range	Min	Max	Mean	Std. Error	Std. Dev.
R	94	48.00	8.00	56.00	43.0745	.74211	7.19504
C	94	11.00	20.00	31.00	26.9468	.27782	2.69355
A	94	88.00	16.00	104.00	67.5957	2.39066	23.17828
Valid N (listwise)	94						

Table 3. Descriptive statistics for intrinsic motivation Likert scale responses

Community relatedness (R)	Mean	Median	Std. Deviation	Minimum	Maximum
I felt really distant to my school community.	5.73	6.00	1.297	1	7
prefer not to interact with my school community	6.29	7.00	1.267	1	7

I felt like I could really trust my school community.	4.99	5.00	1.470	1	7
I'd like a chance to interact with the school community more often.	4.46	4.00	1.676	1	7
I'd really prefer not to interact with my school community in the future.	6.13	7.00	1.401	1	7
I don't feel like I could really trust my school community.	5.72	6.00	1.315	1	7
It is likely that my school community and I could become closer if we interacted a lot.	4.85	5.00	1.579	1	7
I feel close to my school community.	4.90	5.00	1.607	1	7

Competence (C)	Mean	Median	Std. Deviation	Minimum	Maximum
I think I am pretty good at	2.09	2.00	.958	1	4

teaching science in urban school.					
I think I did pretty well at teaching science, compared to other teachers.	5.85	6.00	1.057	3	7
After working at this school for a while, I felt pretty competent.	6.05	6.00	.988	3	7
I am satisfied with my performance at teaching science.	5.56	6.00	1.241	2	7
I was pretty skilled at teaching in urban school.	5.84	6.00	1.081	2	7
Teaching science in urban school was an activity that I couldn't do very well.	1.55	1.00	.990	1	6

Autonomy support (A)	Mean	Median	Std. Deviation	Minimum	Maximum
I feel that my administration provides me choices and options.	4.65	5.00	1.624	1	7

I feel understood by my principal.	4.47	5.00	1.764	1	7
I am able to be open with my principal during class.	4.52	5.00	1.916	1	7
My principal conveyed confidence in my ability to do well in the course.	5.26	6.00	1.759	1	7
I feel that my administration accepts me.	5.37	6.00	1.691	1	7
My principal made sure I really understood the goals of the course and what I need to do.	4.02	4.00	1.929	1	7
My principal encouraged me to ask questions.	4.54	5.00	1.910	1	7
I feel a lot of trust in my school administration.	4.13	4.00	1.885	1	7
My administration answers my questions fully and carefully.	4.14	4.00	1.823	1	7
My principal listens to how I would like to do	4.38	5.00	1.924	1	7

things.					
My administration handles people's emotions very well.	3.81	4.00	1.810	1	7
I feel that my principal cares about me as a person.	4.63	5.50	2.125	1	7
My principal tries to understand how I see things before suggesting a new way to do things.	4.01	4.00	2.003	1	7
I feel able to share my feelings with my principal.	4.14	4.50	2.158	1	7
I don't feel very good about the way my manager talks to me.	5.53	6.00	1.899	1	7

The presence of statistically significant difference in the dependent variables between the surveyed demographic groups was estimated using the independent sample t-test with the additional performance of Levene's test for equality of variances. One-way ANOVA was applied to estimate the relationship between the dependent variables and years of experience, as well as race/ethnicity. Tables 4 present the results of independent sample t-tests for

gender and ethnicity variables respectively. Levene's test indicates the statistically significant difference in standard deviations between gender groups (p=.027, allowing rejecting the null hypothesis under the chosen 5% alpha level). Nevertheless, none of the mean differences between gender or ethnicity groups reach statistical significance for any of the three dependent variables. Similarly, the one-way ANOVA results, presented in Tables 5 and 6 below for years of experience and race/ethnicity, respectively, do not allow rejecting the null hypothesis of equal group means under the chosen alpha level.

Table 4. Independent-sample t-test for motivation score difference between gender groups

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
R	Equal variances assumed	5.040	.027	1.352	92	.180	2.06634	1.52831	-.96902-	5.10171
C	Equal variances assumed	1.711	.194	-.011-	92	.991	-.00630-	.57780	-1.15385-	1.14126

A	Equal variances assumed	1.045	.309	-.063-	92	.950	-.31186-	4.97191	-10.18651-	9.56278

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
R	Equal variances assumed	.082	.775	-.637-	92	.526	-1.01667-	1.59713	-4.18870-	2.15537
C	Equal variances assumed	1.435	.234	-.952-	92	.344	-.56771-	.59629	-1.75199-	.61657
A	Equal variances assumed	.127	.722	.217	92	.829	1.11979	5.15502	-9.11853-	11.35812

Table 5. ANOVA results for respondent groups by years of teaching experience

		Sum of Squares	df	Mean Square	F	Sig.
R	Between Groups	73.999	2	36.999	.710	.494
	Within Groups	4740.480	91	52.093		
	Total	4814.479	93			
C	Between Groups	11.193	2	5.597	.768	.467
	Within Groups	663.541	91	7.292		
	Total	674.734	93			
A	Between Groups	469.517	2	234.759	.432	.651
	Within Groups	49493.121	91	543.880		
	Total	49962.638	93			

Table 6. ANOVA results for respondent groups by race/ethnicity

		Sum of Squares	df	Mean Square	F	Sig.
R	Between Groups	152.701	3	50.900	.983	.405
	Within Groups	4661.778	90	51.798		
	Total	4814.479	93			
C	Between Groups	37.068	3	12.356	1.744	.164
	Within Groups	637.666	90	7.085		
	Total	674.734	93			
A	Between Groups	1156.592	3	385.531	.711	.548
	Within Groups	48806.046	90	542.289		
	Total	49962.638	93			

Linear regression analysis was used to test the significance of years of teaching experience as the predictor of motivation-related dependent variables. Three regression models were estimated using constant and years of experience as the independent variables, and each of the three motivation-related scores (relatedness, competence, and autonomy) as the dependent variables. Table 7 below presents the coefficient estimations for all the three models, with R, C and A as the dependent variables, respectively. All the models show the extremely

low values of determination coefficient (R<.01); furthermore, in none of the models the estimated coefficients reach statistical significance. On the other hand, the constant terms in each of the models show high significance (p<.001), further confirming the results of mean equality tests and not allowing to reject the null hypothesis of equal group means.

Table 8. Coefficient estimates for linear regression models

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	44.250	1.773		24.957	.000
	Years of Experience	-.611-	.836	-.076-	-.731-	.467

a. Dependent Variable: R

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.879	.666		40.381	.000
	Years of Experience	.035	.314	.012	.112	.911

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	44.250	1.773		24.957	.000
	Years of Experience	-.611-	.836	-.076-	-.731-	.467

a. Dependent Variable: C

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	66.505	5.727		11.613	.000
	Years of Experience	.566	2.700	.022	.210	.834

a. Dependent Variable: A

Qualitative Results

The results of the interviews are presented based on questions that were asked in the interview. I focused on asking questions about how the interviewees saw themselves as science teachers. And, from their viewpoint, I am drawing conclusions about factors that motivate science teachers to stay in and teach in urban areas.

Throughout the interview analysis, I focused on the following: The definition of a science teacher in urban settings; the support from school administration; understanding of challenges facing urban schools, students and teachers rationale for staying at these settings; and the factors that influenced teachers to stay or may cause them to leave in the future.

Model of Urban Science teacher in the lens of Stayers

Six of the science teachers defined a science teacher in urban setting as a person who is willing to help and provide a path for students with high needs. four of the teachers added terms such as coping with tough situations. Teachers kept talking about and bringing up characteristics such as being patient, dedicated and providing support to students, and viewing the success of their students as their own success. There were no differences by gender or grade level in defining a science teacher in urban settings. Here are some of the responses to the definition question.

Samadi described science teachers who persist in urban settings as “opportunity bringers” She added that being an opportunity bringer was a part of

her since her childhood. She said: “it is something in me since I was a child… it is big and I cannot really express it.”

Mary said an urban science teacher teaches science in context. She focused on the science as a context by stating:

> “Make science as part of their everyday and teach it from the neighborhood that they are coming from…I see myself as a guide to my students a make them see things around them differently”

Glenn said that a science teacher in urban setting needed many things in order to be successful:

> “To be very well educated … you don’t get more but put more effort things like that... teachers need to see that teaching at this school is a never ending job. The way we teach in America is unfair and I wish we had more time to observe each others as teachers and work in teams and look for resources so we can give more…”

Reasons Behind Their Motivation to Stay and Teach

Seven of the responses about the motivation for staying were clustered around staying for the sake of students. Four of the teachers identified loving the subject and some identified personal factors. Their reasons for staying, and the inspiration to teach, triggered teachers’ memories of their childhood. Seven of the teachers talked about the way their parents raised them, and their lifelong desire to care for others and helping.

Only Samadi and Katie reported different reasons to stay in their school. Samadi reported that she felt connected and supported by the department at her

school and that she wanted to see the results of her teaching. Samadi described her school situation when she first arrived as chaos. She said:

> " When I first came in the school was unsafe place…kids used to through furniture of balcony… It was a mess and you know we .. I mean me and the teachers and the administration came to a point where we all agreed that we need to work for something better… and it took a while but I just want to stay and see the results"

She also added that being updated by professional development and extra courses had affected her decision to stay where she is now. Here are some of her quotes:

> "See… there are things like. Things really made rethink about me as a teacher. …Studying psychology, environmental science, and taking courses at doctoral level made me stay where am at right now. You know when I grow up; I want to see one of my students in careers such as physicians or dentists. I don't want to see only rich white kids getting these jobs…"

Katie said that she was satisfied at her school. Katie also noted there were not enough job opportunities with the current economy so it was safer to stay at this school rather than to be jobless. Katie did not mention any problems or dissatisfaction about staying at her school.

The rest of the teachers said that they were motivated to stay to teach the students. However, the teachers included other reasons while talking about their

motivations to stay. Reasons such as being accepted, trusted, and belonging to either the school community or the urban community in general.

For example, Fred said that the principal wanted him because during the job interview he was not talking about himself but the students:

> " … I really had no idea why they liked me and after hiring me...I...I went and I asked him. Why you hired me? And he said you didn't talk about yourself you only showed you want to help the kids. … I mean …being accepted pretty cool feeling. But again I like it. I want to stay to see and help the kids in need…"

Mary mentioned that students were the main motivator for her to stay but she also added that it is close to her house. That means Mary lives in the community where the school is located. Edward also lives in the same community and he said,

"I want to see the kids in my neighborhood getting better positions and go to college… I like to teach those kids and…. I can say that …they are my inspiration."

Glenn said her reason to stay was also the students. She said " the kids needs me and I see that they like me and when I see the aha moment and I could not do science without them around me…"

Pat felt comfortable teaching in a diverse situation and she added that her previous experiences overseas had made it easier for her to teach in urban settings.

Edward saw himself, since his childhood, as a giver:

"Since my childhood my mother points out to me like... like that child who could fix stuff and help in the neighborhood and depend on. Yeah since I was a child my parents trusted me in like stuff at home, or when my young cousin came over. Then, I just felt when I was in college taking science courses. I felt I could stuff for my people and help them by teaching the subject I liked'

If You Could Leave

Teachers did not have any intentions to leave at the time I interviewed them. They were satisfied with their schools. But I asked them if someday they decided to leave or quit what would be their reasons for this decision? The responses clustered teachers into three groups. Three of the teachers mentioned retirement. Another three teachers said going back to school and studying. The last three female teachers mentioned that family and personal life would cause them to leave their schools.

Rosa reported retirement as the reason to leave the profession. She also said that her school was falling in terms of keeping up with standardized tests. She expressed fear about moving to another school and said she would rather wait until she retires or find a school in the same area if her school was closed.

Glenn reported that she will retire and may join NASA (National Aeronautics and Space Administration) doing educational programs for children.

"I am not really moving anywhere my home is in the same community. I will retire but I will start my job with NASA if I retire with less money but

I will enjoy less work and get more into science and because I love to learn".

Mary told me she would move closer to where she lives if she had children. She said, " I am not moving anywhere so far but if so.. that is going to be I want to be closer to my family, my mom to live near my house … neighborhood… but if I have kids of course"

Edward did not want to leave the school community, which was his community too. He only thought about getting his masters degree in science education. He said the going back to school would definitely help him to give more to his community.

Teachers in The Class

All nine teachers talked about different ways of teaching science. They mentioned group work, labs, projects, and hands on as a way of teaching science. They also talked about the techniques they used during class. Seven of teachers emphasized the importance of classroom instruction. All teachers said that teaching science is doubled in terms of challenges with less equipment and the type of students they teach. Edward depended on his "funny" personality to make science more exciting to his students. However, Rose and John talked about less patience, as they got older. Rose said:

" I guess it is just me getting older and the kids and this generation is kind 'a different from my style."

Teachers reported different styles while teaching science. They did lab work, grouping, reading, lecturing, and teaching through inquiry. All methods

depended on the availability of resources, time of the year, and number of students in classes. Lack of resources and lack of technology were the main issues that they were concerned about most. Some teachers did not have issues with their students. Rosa stated:

> "I only get the honor students. You know I teach chemistry students and I rarely get ELL students for example. I don't deal with many issues that other teachers have to face daily"

Pat was very positive about her practices. She taught in a worse situation overseas than in urban schools. She said:

> "I worked in worse situation if I compare it to those schools. I mean I still have tools, equipment, stuff to do my lab work. For me this is quite good. In terms of my class I spend time in the beginning of the year and teach them my instructions and rules in class"

Administration Support

Teachers' attitude was positive in terms of their administration. Almost all of them talked positively about their principals. Some of the teachers had freedom in terms of designing their curriculum, or worked hand in hand with their administrations to develop goals. The critiques were at the district level concerning inequity of distributing funds, and equipment among schools. Teachers felt respected and protected by their school administration. Rose liked that she had the freedom in designing her curriculum

Colleagues support

Edward was very grateful for his mentor and colleagues too. He learned

teaching skills from his mentor and they still work together even after his mentor left the school. Rosa did not seem to be happy about her school situation in terms of failing test scores but she did not blame this on the administration. She blamed the school district and the standardized test. She collaborated and helped teachers as a mentor. "I enjoyed working with new teachers and help them but they seemed to be very stressed out and the next year or so they leave.". Samadi counted on teamwork and she described her colleagues as "awesome" . She further added that working as a team contributed to progress at the school.

Rewards and Negativity in Urban Schools

The rewards of teaching in an urban setting were the students' success and achievement. Teachers seemed to be satisfied and rewarded by what they were doing in the urban community. They viewed themselves as home providers for students with high needs. They saw meaning in staying and felt respect either from their administration or the community.

Samadi talked about teaching for the sake of teaching not just for external rewards. She said,

> " In this country, all what we think about is making money out of people and we taught this issue to our kids too. Look around now and see where did we end up. And I blame it on our system. We taught kids to look for money and care for money. We need to rethink and I mean it on the way we provide education for the next generation."

Edward felt proud when he talked about his experience with the urban community. He said that parents were satisfied and thankful too, making him feel proud about the work he was doing.

Chapter 6

DISCUSSION AND CONCLUSION

This study was initiated as a result of concerns about the reasons why science teachers in urban settings tend to stay and teach. Much of the previous research was conducted to investigate the rate of turnover among teachers in urban settings, but few researchers studied teachers who stayed and taught, and the motivational factors behind their staying. The pursuit of answers to the unanswered questions led to the purpose of this study, which intended to find out what influences and motivates science teachers to persist in urban settings. This objective was met through a mixed method study that involved 194 middle and high school science teachers' responses to the survey about self- determination theory. Teachers who scored high in the survey were contacted for an individual interview, which included questions about both intrinsic and extrinsic motivation. The study contributed to research about motivation among teachers, and supported future studies related to motivation among teachers in urban schools and the influence of demographic characteristics upon their decision to stay.

Central questions that the study sought to answer were:

- Are science teachers in urban setting intrinsically motivated to persist in urban schools?
- Do years of experience and or race affect science teachers' motivation?
- What are the roles ofautonomy, relatedness, and competence?
- How was the decision to stay affected by science teachers' practice and identity?

Answers to these questions were based on results from the Intrinsic Motivation Study.

The results of the study suggested that persisting teachers have intrinsic motivations as well as extrinsic motivations. It was found that years of experience and ethnicity did not affect teachers' motivation to stay and teach in urban schools. Chapter 5 provided a full account of the data and results of the study. The following paragraphs provide a brief summary of the findings of the study, discussion, implications, and recommendations for future research.

Interpretation of Findings

Survey

The majority of teachers did not agree on which intrinsic motivation factors were more important to them. There might be additional motivational reasons (extrinsic or intrinsic) that result in their job persistence. In this study, I only investigated autonomy, relatedness, and competence among science teachers.

Moreover, findings from the analyses revealed that none of the dependent variables were impacted by the independent variable. The results from ANOVA indicated that the survey instrument could not attribute differences in intrinsic motivation and working experience to either ethnicity or teaching experience. The independent variables that were studied did not significantly affect the majority of science teachers' intrinsic motivation.

In terms of years of experience, my findings reinforced Huang and Moon (2009), who found that after 21 years of teaching experience, student achievement

dropped. In this dissertation, 36.2% teachers reported more than 15 years of teaching experience. Also, The National Board for Professional Teaching Standards (NBPTS) certification found that many teachers were still gaining proficiency and improving their effectiveness after an average of 11 years of teaching. So, experience might not be a precise variable to test competence, autonomy, and relatedness. Hence, it is recommended for future researches to compare beginners with stayers.

In terms of the ethnicity, the majority of teachers were white; 68.1% of them identified White/Caucasian ethnicity. The high percentage of Caucasian ethnicity was likely to bias the data; however, my data supported The National Education Association (2007), which reported that more than 38% of schools across America do not have teachers of color in their classrooms. I did not have an exact idea about the number of teachers and their ethnicity in each school. I could not determine the percentage of participation of non-white teachers or teachers of color. As a result, the ethnicity variable was not precise due to variations in the number of the participants' ethnicity.

From these findings, one can see that relatedness, competence and autonomy were insignificant motivational factors. Also, it was difficult to draw clear conclusions about the significance of the survey with a large sample. The limited findings of the survey recommend future research, which should include a comparison study between extrinsic and intrinsic motivation.

Interview

The second phase of the study produced vivid insights into intrinsic motivations. The selected participants, who had scored highest in the survey, were interviewed once, in which they reported their views and shared some of their feelings about teaching science in urban schools. All of the teachers in the interview were pleased with their present levels of autonomy, and mentioned their independence of choice in terms of how to teach science to their students, design assessments, and customize instruction for their students. They reported feeling freedom in their decisions regarding how they taught science. Even though their levels and forms of freedom varied, they still experienced freedom over their classes and curriculum.

The results of the interview portion of the current study strongly supported the importance of autonomy to the teaching community. The findings from the interviews also supported Brunetti's (2001) definition of professional autonomy as an intrinsic reward providing high levels of career satisfaction. The findings were similarly in accordance with Bavendam's (2001) argument , that employees are more satisfied when they have enough freedom working in a certain position. The interview section also supported the conceptual framework of self-determination theory. During the interviews, teachers' responses emphasized the following:

- Classroom environment variables (autonomy support, positive teacher-principal interaction, and teacher relatedness),
- Psychological needs of autonomy and relatedness,
- Self-determined motivation.

The reason interviewees had relatedness, competence, and autonomy was that they also reported extrinsic motivation. Interviews also discussed other factors – love of students, service, and making a contribution toward the community. Teachers experienced autonomy, supported by their principal, and a sense of community, which, in turn, predicted teachers' motivation regulation. Intrinsic regulation was reported as feelings of enjoyment, while external over-regulation predicted hopelessness, and interjected regulation positively predicted hopelessness and a feeling of guilt. The nine teachers felt that they had to fix situations, help the community, and guide their students to a better future. Interviewees also had interjected regulation – guilt. These findings were supported by Self-Determination Theory, which is based on the assumption that people have innate tendencies to grow and develop psychologically, and to combine experience into self-concept (Deci & Ryan, 1985, 2000). SDT is a macro-theory of human motivation, personality development, and satisfaction (Ryan, 1995). The theory focuses especially on self-determined behavior and the social and cultural conditions that stimulate it (Deci & Ryan, 1985).

Teachers felt related to either students or school community or both. Teacher reported that they wanted to stay to see students' succeed. Teachers felt accepted by peers and/or their principal. As I mentioned in the literature review, relatedness can sometimes be perceived as friendship because people want to feel accepted and supported. Brophy (2004) noted that interaction with others is important, and it fulfills a need to belong to a group. The desire for belonging reflects a need for connection to others; thus, people feel more secure and

composed when they are accepted in a group (Brophy, 2004). The need for relatedness can be satisfied in the working environment when individuals are allowed to interact freely with peers without imposed limitations on whom to interact with. Autonomy develops best in situations where individuals feel a sense of relatedness. The interviewees expressed their satisfaction and belonging throughout our dialog. They also felt competent because they expressed that they were able to control their classes. They managed to teach science despite many barriers. Brophy (2004) explained the concept of competence as needs that can be met when individuals successfully deal with the environment to control things around them.

From the analysis of the data and interviews, I have reached the following conclusion. The teachers are not inclined to leave their job in urban schools for several reasons, which include loving their students, feeling appreciated by the community, and being trusted by their principals. The existing set of factors, which are favorable for the teachers to continue their teaching career, include living in the same community as their students, which implies a stronger emotional connection and a feeling of responsibility from the educator' side; financial issues – science does not always provide stable income; and personal life issues, which influences female educators' decision-making in leaving or staying in school. Long-term experience in teaching also contributes to the choice to continue teaching rather than getting involved in science.

A Call for Public Policy

There is a big difference between preparing a teacher to survive regulations such as NCLB, or enriching teachers with knowledge and empowering them with extrinsic motivators so that they provide the community with better education. Deci and his collaborators (1995) found out that human interaction and sharing help integrate and organize complex experiences into meaningful social relationships. At the workplace, for example, one is able to engage, interact, and organize information through constant peer interaction. Extrinsic motivation should work toward empowering teachers and enriching their abilities to teach science. In the interviews, almost all teachers had the freedom to speak and they had a voice among administration, principals, and school community.

Furthermore, instead of listing reasons for teachers to leave teaching, my dissertation supports Neito's (2003) viewpoint about finding and focusing on successful teachers, and tries to make sense of the reasons behind their motivation to teach in urban schools. It is obvious that discrimination and prejudice have played a role in the failure of large urban public schools. The overemphasized stereotypic image about urban schools may similarly play a role in lowering expectations. The stereotypes have resulted in lowering self-esteem and achievement among teachers, and may have caused some to leave. Yet, there is no justification to apply such beliefs to the entire school system since there are good administrations, principals, and leaders in the education sector, who care for their teachers and students. If policy makers are not leaving children behind, they should rethink the exhausted teacher who is left behind. Thus, policy makers

should not design regulations that punish teachers, like retention based on student scores, or reduced pay when they are teaching in inner cities or "under-resourced" schools.

Implications

To have more motivated science teachers in urban settings, the findings of this dissertation could be implemented into practice in the following ways:

- Teacher education departments at the universities should include educational psychology classes with an emphasis on motivation. This will increase awareness among teachers of various ways regarding how to motivate themselves in the course of teaching.
- Teacher colleges should provide opportunities for multicultural student teachers and should offer them scholarships. This may increase teachers from different communities to go back and teach in their communities with some diverse experience about other communities.
- Experienced teachers should mentor new teachers, support them, and provide them with hints that they learned over the years, in order to help new teachers reduce work pressure.
- There should be structured meetings for teachers in which they may share their problems and discuss possible solutions.
- Authorities should implement extrinsic motivation in a beneficial approach to increase teachers' persistence in urban schools.

- Public school administrators must develop and manage policies that provide teachers with suitable support, rewarding them instead of punishing them.

Recommendations for Future Research

Further research should be conducted in multiple settings to assist active specialists in providing universities with greater insight in developing better programs. The results of this study may vary when larger samples are investigated and when teachers from different ethnic populations are included – even if the have to be oversampled. Future research may also include a comparison study to investigate the role of intrinsic and extrinsic motivation among teachers, or teachers and their administrations, as measured by the IMI. I also recommend looking at quality of instruction based on intrinsic and extrinsic motivation of teachers. If the future research is quantitative, additional possibilities for improving external validity of the study exist, which include extending the eligibility for participation through applying quantitative methods of causal reasoning to the collected data, and improving the methods of geographical clustering in order to generalize results to the country level.

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APPENDIX A

SURVEY

Work Climate Questionnaire

There are levels of school administration. Some teachers will have a department head and others will not. Everyone will have a principal. Administration could also refer to the superintendent and curriculum and other people in the central office. teachers may feel support from one level but not another. This questionnaire contains items that are related to your experience with the school administration. Administration has different styles in dealing with teachers, and we would like to know more about how you have felt about your encounters with your manager. Your responses are confidential. Please be honest and candid. Your answers will allow the researcher to identify your consideration of what motivates you to teach in urban settings

Use the following scale:

For each of the following statements, please indicate how true it is for you, using the following scale:

Relatedness	Not At All True			Somewhat true			Very True
1. I felt really distant to this person.	1	2	3	4	5	6	7
2. I really doubt that this person and I would ever be friends	1	2	3	4	5	6	7
3. I felt like I could really trust this person.	1	2	3	4	5	6	7
I'd like a chance to interact with this person more often. 3.	1	2	3	4	5	6	7
4. I'd really prefer not to interact with this person in the future.	1	2	3	4	5	6	7
5. I don't feel like I could really trust this person.	1	2	3	4	5	6	7
It is likely that this person and I could become friends if we interacted a lot. 6.	1	2	3	4	5	6	7
I feel close to this person. 7.	1	2	3	4	5	6	7

Perceived Competence	Not At All True			Somewhat true			Very True
I think I am pretty good at this activity. 1.	1	2	3	4	5	6	7
I think I did pretty well at this activity, compared to other students. 2.	1	2	3	4	5	6	7
After working at this activity for awhile, I felt pretty competent.	1	2	3	4	5	6	7
I am satisfied with my performance at this task.	1	2	3	4	5	6	7
I was pretty skilled at this activity. 3.	1	2	3	4	5	6	7
4. This was an activity that I couldn't do very well. (R)	1	2	3	4	5	6	7

	Not At All True			Somewhat true			Very True
5. I feel that my administration provides me choices and options.	1	2	3	4	5	6	7
6. I feel understood by my principal	1	2	3	4	5	6	7
7. I am able to be open with my principal during class.	1	2	3	4	5	6	7
8. My principal conveyed confidence in my ability to do well in the course.	1	2	3	4	5	6	7
9. I feel that my administration accepts me.	1	2	3	4	5	6	7
10. My principal made sure I really understood the goals of the	1	2	3	4	5	6	7

course and what I need to do.							
11. My principal encouraged me to ask questions.	1	2	3	4	5	6	7
12. I feel a lot of trust in my school administration.	1	2	3	4	5	6	7
13. My administration answers my questions fully and carefully.	1	2	3	4	5	6	7
14. My principal listens to how I would like to do things.	1	2	3	4	5	6	7
15. My administration handles people's emotions very well.	1	2	3	4	5	6	7
16. I feel that my principal cares about me as a person.	1	2	3	4	5	6	7
17. My principal tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6	7
18. I feel able to share my feelings with my principal.	1	2	3	4	5	6	7
19. I don't feel very good about the way my manager talks to me.	1	2	3	4	5	6	7

Years Of Experience:
(5-10 years) (11-15 years) (15 < years)

Gender:

Male Female

Ethnicity:

White/Caucasian African American Hispanic Other

APPENDIX B

INTERVIEW QUESTIONS

You recently completed a questionnaire in which you responded to questions about motivation of science teachers. I would like to follow up with you in order to better understand how you were thinking about yourself as a science teacher in urban settings

You can be assured that no information collected in this research will be disclosed in any particular form, or be disclosed to anyone else without your consent. You can also be assured that the information you supply will not be used for purposes other than research and that you will in no way be harmfully affected as a result of participation.

Your name, your identity, and the name of your school will be changed. All of the information you provide will be destroyed after one year from the study

How would you define yourself as a science teacher in urban high school? Please describe your vision of model of science teacher in urban setting?
What motivates you most to stay in this school?
What personal strategies do you use to make you effective in your position as a science teacher?
What kind of support does your administration provide with if so?
During school year, how often do you utilize strategies to encourage all students to participate in class? In your opinion, how do most students best learn science?
How do you provide types of learning opportunities for your students? What strategies do you use for engaging all students? How would you describe your approach to classroom management?
Has there been a person who has been a positive influence in your decision to stay in the teaching profession or a particular school? If so, please list the position that person held. (NO NAMES PLEASE)/ Or was it your own decision?
What is the ONE critical factor that influenced your decision to stay in the teaching profession or your school?
If you are staying in science education, what are the things that have affected your decision to remain in science education and what do you feel about them?
What is your most rewarding part in teaching in urban settings? What is most inspiring about teaching in your classroom? What is most challenging about teaching in your classroom?
If you plan to stay at your current school, what is the ONE main reason that you will do so?
If you plan to transfer to another district, what is the ONE main reason you will do so?
Would you leave science education? Why or why not? Explain.
What makes you dissatisfied as a science teacher in urban settings?
Do you think your preparation program prepared you to teach in urban setting? How? And why or why not?
How do you perceive the career of being a teacher? Prompts: a. Do you think teaching is demanding? Why/Why not? b. Do you think teachers are paid well? Why/Why not?
How do you view your teaching ability? Do you think you have the ability to be an effective teacher? Why/Why not?

Is there anything else you would like to tell me about your decision to become a teacher?

APPENDIX C

CONSENT FORMS

Subject Consent Form For Interviewing Teachers

I am a doctoral student at Arizona State University, and I am conducting interviews for my dissertation research. I am studying the causes of motivations in science teachers in urban settings and what drives them to persist in these settings.

During this study, you will be asked to answer some questions to investigate the causes for high school science teachers to be motivated in urban schools. The interview was designed to be approximately one hour in length. However, please feel free to expand on the topic or talk about related ideas. Also, if there are any questions you would rather not answer or that you do not feel comfortable answering, please say so, and I will stop the interview or move on to the next question, whichever you prefer.

All the information will be kept confidential. I will keep the data in a secure place. Only the chair committee and myself will have access to this information. Upon completion of this dissertation, all data will be destroyed after one year.

Participant's Agreement:

I am aware that my participation in this interview is voluntary. I understand the intent and purpose of this research. If, for any reason or at any time I wish to stop the interview, I may do so without having to give an explanation.

The researcher has reviewed the individual and social benefits and risks of this project with me. I am aware the data will be used in a dissertation research that will be publicly available. I have the right to review, comment on, and/or withdraw information prior to the dissertation Project's submission. The data gathered in this study are confidential with respect to my personal identity, unless I specify otherwise. I understand if I say anything that I believe may implicate myself, the interviewer will immediately rewind the tape and record over the potentially implicating information. The interviewer will then ask me if I would like to continue the interview. By participating in this interview, I will receive $ 50 dollars get certificate by email.

If I have any questions about this study, I am free to contact the student researcher or the faculty adviser (contact information given above). If I have any questions about my rights as a research participant, I am free to contact the chair of committee review board: Dale Baker, Ph.D. (dale.baker@asu.edu, (480) 965 -6067. Or the co –investigator Fatimah Alhashem falhahe@asu.edu (480) 310-6573. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788

I have been offered a copy of this consent form to keep for my own reference.

I have read the above form, and with the understanding that I can withdraw at any time and for whatever reason, I consent to participate in today's interview.

By signing below you are agreeing to participate to in the study.

_____ _____

Signature Date

(If applicable, By signing below, you are agreeing to be taped.)

_____ _____

Signature Date

What causes Science teachers to stay in urban settings?

Informed Consent Form

Purpose of the Study:

This is a study is being conducted by " Fatimah Alhashem" a doctoral student in the college of education at Arizona States University. The purpose of this study is to examine the causes of motivations in science teachers in urban settings and what drives them to persist in these settings.

What will be done:

You will complete a survey, which will take 10-15 minutes to complete. The survey includes questions about your intrinsic and extrinsic factors.
I also will ask for some demographic information so that I can accurately describe the general traits that participate in the study.

Benefits of this Study:

You will be contributing to knowledge science teacher in urban setting and your responses, and by interning the survey you will receive gift certificate.

$10.00 Amazon.com gift cards will receive the gift certificate via mail. After filling out the survey.

Risks or discomforts:

No risks or discomforts are anticipated from taking part in this study. If you feel uncomfortable with a question, you can skip that question or withdraw from the study altogether. If you decide to quit at any time before you have finished the questionnaire, your answers will NOT be recorded.

Confidentiality:

Your responses will be kept completely confidential. We will ask you to include your name and an e-mail address when you complete the Internet survey for a possible follow up for one interview. Only the researchers will see your individual survey responses and the results of our content analysis. The list of e-mail and weblog addresses of our participants will be stored electronically in a password-protected folder; a hard copy will be stored in a locked filing cabinet. After we have finished data collection and have sent you a copy of the results of the study, we will destroy the list of participants' e-mail addresses and weblog addresses.

Decision to quit at any time:

Your participation is voluntary; you are free to withdraw your participation from this study at any time. If you do not want to continue, you can simply leave this website. If you do not click on the "submit" button at the end of the survey, your answers and participation will not be recorded. You also may choose to skip any questions that you do not wish to answer. The number of questions you answer will not affect your chances of winning the gift certificate.

How the findings will be used:

The results of the study will be used for scholarly purposes only. The results from the study will be presented in dissertation, and the results might be published in a professional journal in the field of psychology. Because we will ask you about a

number of different aspects of your weblog activity and your friendships, it is likely that we will use

your data to address multiple questions regarding women's weblogs and same-sex friendships.

Contact information:

If you have concerns or questions about this study, please contact the chair of the committee Dr. Dale Baker at dale.baker@asu.edu

By beginning the survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Thank you very much in advance for your willingness to participate in my dissertation study. If you have any other questions, please feel free to email me.

Subject Consent Form For Interviewing Teachers

I am Fatimah Alhashem, a doctoral student at Arizona State University, and I am conducting interviews for my dissertation research. I am studying the causes of motivations in science teachers in urban settings and what drives them to persist in these settings.

During this interview, you will be asked to answer some questions to investigate the causes for science teachers to be motivated in urban schools. The interview was designed to be approximately one hour in length. However, please feel free to expand on the topic or talk about related ideas. Also, if there are any questions you would rather not answer or that you do not feel comfortable answering, please say so, and I will stop the interview or move on to the next question, whichever you prefer.

All the information will be kept confidential. I will keep the data in a secure place. Only the chair committee and myself will have access to this information. Upon completion of this dissertation, all data will be destroyed after one year.

Your participation in this interview is voluntary.

The data will be used in a dissertation research that will be publicly available. You have the right to review, comment on, and/or withdraw information prior to the dissertation project's submission. The data gathered in this study are confidential with respect to your personal identity. By participating in this interview, you will receive $ 20 dollars certificate by email via amazon.com.

I would like to audiotape this interview. The interview will not be recorded without your permission. Please let me know if you do not want the interview to be taped; you also can change your mind after the interview starts, just let me know. The interview will be recorded through my laptop recorder and I will keep them in electronic files for the study. My personal laptop has a password and no one has an access to it except myself. The audiotapes will be saved in the same laptop for one year after the interview and then it will be destroyed electronically.

I will make sure to maintain your confidentiality in all written or published material. I will use pseudonyms for all participants, locations, and institutions at all times in this study. Interview tapes will be recorded, then transcribed, and will be stored and labeled only with your pseudonym. Your name will be removed from any documents collected. I am asking you to allow me to extensively use your words in my dissertation and published material. At your request I will share any written material that includes your words, for your review of accuracy. No physical, psychological, or social risks are anticipated.

If you have any questions about this study, please contact the student researcher or the faculty adviser: Dale Baker, Ph.D. (dale.baker@asu.edu, (480) 965 -6067, Or the co – investigator Fatimah Alhashem falhahe@asu.edu (480) 409 1901. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788

You have been offered a copy of this consent form to keep for your own reference. Please let me know if you consent to participate in today's interview and agree to be quoted (under a pseudonym) in publications and conference presentations.

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Dale Baker EDB
From:	Mark Roosa, Chair Soc Beh IRB
Date:	09/07/2011
Committee Action:	**Exemption Granted**
IRB Action Date:	09/07/2011
IRB Protocol #:	1108006798
Study Title:	What motivates science teachers to teach in urban settings: a mixed method approach

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.