

TEACHERS' INTRINSIC MOTIVATION FOR TEACHING IN THE CONTEXT OF HIGH-STAKES

EDUCATION REFORM

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Table of Contents

List of Tables.....	vii
List of Figures.....	viii
List of Appendices.....	ix
Abstract.....	x
Chapter 1: Introduction.....	1
Chapter 2: Literature Review.....	3
History of Educational Reform.....	3
Theories of Human Motivation.....	7
Motivation for Teaching.....	14
Research Questions.....	22
Chapter 3: Method.....	23
Participants.....	23
Instruments.....	23
Procedure.....	27
Data Analysis.....	28
Chapter 4: Results.....	34
Demographics.....	34
Correlations.....	37
Variable Structure.....	38
Research Question One.....	39
Research Question Two.....	41
Research Question Three.....	42
Research Question Four.....	44
Chapter 5: Discussion.....	45
Summary.....	45
Conclusions.....	47
Limitations.....	53
Implications.....	55
Contributions.....	58
References.....	61

Tables.....71

Figures.....81

Appendices.....86

List of Tables

Table 1: Descriptive Statistics of Participant Demographic Variables.....	71
Table 2: Significant ANOVA Results For Years of Teaching Experience.....	72
Table 3: Significant ANOVA Results For Grade Teaching.....	73
Table 4: Significant One-Way ANOVA Results For Gender.....	74
Table 5: Intercorrelation Matrix of SDT and Impact Variables.....	75
Table 6: Descriptive Statistics For Outcome Variables.....	76
Table 7: Goodness of Fit Indicators of Hypothesized Latent Variables.....	77
Table 8: Standardized Factor Loadings for Overall Variable Models.....	78
Table 9: Goodness of Fit Indicators of SDT Needs on Impact.....	79
Table 10: Standardized Loadings for SDT Needs on Impact	80

List of Figures

Figure 1: Map of NYS Counties.....81

Figure 2: Hypothesized Model.....82

Figure 3: Resulting Model of Motivation.....83

Figure 4: Resulting Model of Impact.....84

List of Appendices

Appendix A: Measure of Task Impact.....	85
Appendix B: Work Related Basic Needs Scale.....	86
Appendix C: Demographics.....	87
Appendix D: Informed Consent.....	88

Abstract

This research paper presents existing literature on intrinsic motivation and applies it to teachers in an environment of high-stakes education reform efforts. It seeks to acknowledge that there has been an increase in level of external control placed on teachers in New York State, and to discuss potential impacts of these efforts on teachers' intrinsic motivation according to Self-Determination Theory (SDT). This paper presents survey research designed to examine teachers' perception of the impact education reform efforts have had on their role in various work tasks, related to the extent to which they perceive their needs for autonomy, competence, and relatedness are met at work. Confirmatory factor analysis and structural equation modeling was used to examine the relationships between participant responses and the theoretical variables at hand. T-tests, ANOVA, and Pearson's correlations were also examined to obtain a greater understanding of the variable relationships. The results of this research indicate that teachers have felt a negative impact on some of their teaching-related tasks; the SDT framework of autonomy, relatedness, and competence needs maintained integrity in this sample; autonomy-support was significantly related to perceived impact of high stakes education reform efforts. The implications of low intrinsic motivation among teachers on students and the educational environment, and implications for future reform efforts are discussed.

Chapter 1: Introduction

Human motivation is the study of the elements of an individual's internal and external context that propel him or her to act in a given way (Deci & Ryan, 2008). It has long been a focus of psychological research, and has been applied to various work settings, including teaching (Sylvia & Hutchinson, 1985). As a result of this pursuit, there exist many lines of research seeking to define the ideal motivational conditions that will lead to positive life outcomes. It has come to be accepted that when the source of motivation originates within the individual, various positive outcomes occur. These include: job effectiveness, persistence at difficult tasks, psychological well-being, and general health (Deci & Ryan, 2000; Fernet, 2012). One factor that harms this motivation is the perception of an overly controlling environmental context (Deci & Ryan, 2000; Van de Broeck, Vansteenkiste, De Witte, Lens, & Soenens, 2010; Vansteenkiste, Simons, Lens, Sheldon & Deci, 2004).

The study of what motivates individuals to perform well in their jobs is currently of relevance to the profession of teaching. In recent years, educational reform movements have increased the amount of external regulation over methods of teaching and evaluation. One component of these reform efforts is the addition of more severe consequences for results of teaching evaluations. A reexamination of motivation for teaching is pertinent given these recent legislative policies involving high stakes accountability.

The purpose of this study is to examine teachers' intrinsic motivation in their work setting in light of educational reform efforts that are perceived as "high-stakes" by some. The current context of education reform in New York State will be discussed, and this study will serve as a foundation for further examination of related factors influencing teachers'

sense of intrinsic motivation. It is suspected that teachers sense this external regulation, and feel added pressure from these high-stakes reform efforts. Specifically, it's expected that teachers feel high-stakes reform efforts have impacted their role in a harmful way. It is further expected that those who perceive these efforts as having a harmful impact on their role will also have lower satisfaction of the needs for autonomy, competence, and relatedness.

Chapter 2: Literature Review

History of Educational Reform

The quality of education in the United States has been a topic of research and debate for decades (Johnson, 1990). In recent years, educational practices and outcomes have received increased federal attention. In 2001, the No Child Left Behind Act ((NCLB) United States, 2002) implemented standardized testing for all students in grade 3-12. In 2010, the Common Core Standards for curriculum were implemented in 45 states and the District of Columbia (Miller & Hanna, 2014). The Common Core Standards are a set of academic standards and goals for student achievement in math and literacy (Common Core, 2014). Also in 2010, the federal program, Race to the Top reform initiative was implemented in 19 states (The White House, 2014). New York State has taken part in both of these reform programs. The goal of Race to the Top is to increase the standards for teacher effectiveness and student learning, with a focus on data driven decision-making (The White House, 2014).

Race to the Top

In May 2011 Annual Professional Performance Reviews (APPR) for teachers and principals were incorporated into New York State Legislation via an amendment to education law 3012-c in order to secure federal grant, Race to the Top, funds (D'Agati, 2012). These funds were \$4 million to be disbursed to participating schools over four years in exchange for pledging to meet certain standards. These standards fell under four domains: adopt rigorous standards to prepare students for college and careers; ensure teachers and principles are highly effective; use data systems to inform teaching and learning; take immediate action to intervene in persistently low-performing schools (Miller

& Hanna, 2014). Beginning in 2011, teachers in New York State were given a yearly performance score on a scale of 0-100. This score was to be based on student achievement data (40%) and teacher observational data (60%). As a condition of these ratings, it was possible for teachers receiving a certain performance rating for two consecutive years to be fired by the district (Editorial, 2013). These methods were intended to increase accountability for teacher's methods, and their student outcomes, thereby improving the quality of education in the United States. The need for educational reform is well supported, and proponents of the initiative believe it has propelled more reform effort than any other program (Duncan, 2010). In fact, over 40 states applied to be a part of this program, and believed in the promise the program had for improving their schools. However, teachers in many states expressed distress and concern with these methods, and not all of the districts within each state agreed to involvement (Dillon, 2010).

Reaction to Educational Reform

Over the last 10-15 years, educational reform has included: increased use of standardized testing by NCLB, use of standardized curriculum by the Common Core, and use of standardized teacher evaluation tools tying outcomes with teacher employment. Educators in the United States have expressed mixed reactions to these reform efforts, particularly in regard to Race to the Top participation. Teachers who did not agree with the program in Louisiana, for example, provided reasons including fear of being micromanaged in their jobs (Dillon, 2010). Representatives from New York State and Illinois voiced concern that these methods are harmful to the teaching and learning environment. Concern in New York State came from several sources and New York has been considered one of the most concerned states (Strauss, 2012).

In August 2011, the New York State United Teachers (NYSUT) petitioned the Board of Regents of the University of the State of New York to dispute the implementation of APPR (Lynch, 2011). This case was based on the grounds that many sections of the new regulations were in violation of previous regulations preventing student performance data from being used in hiring, firing, or tenure decisions. The teachers' union expressed that the way in which the legislation was written allowed for this possibility (Lynch, 2011).

The NYSUT has also expressed concerns that implementation of APPR was potentially harmful (Lynch, 2011). They discussed their belief that these methods of teacher evaluation promoted competition among teachers, and would harm collaboration between the teachers' union and board of regents. They urged that implementation of such a system without time to adequately plan and prepare would result in anger, resistance, stress and confusion. The NYSUT APPR Workgroup published a report to local NYSUT presidents, which summarized their concerns and recommendations for changes in APPR (NYSUT, 2014). Among these concerns were that the measure is not a valid or reliable indicator of teacher effectiveness or student learning. Another concern was that the policy is so restrictive that it fails to show concern for teachers and the diversity of students (NYSUT, 2014).

A letter of concern was written in March of 2012 by the principals of New York State regarding APPR legislation (Feeney & Burris, 2011). The authors raised three major concerns with the methods of evaluation: the methods were not based on research, a suspicion that the relationship between teacher and student would be harmed, and a concern for an improper use of tax dollars. It has also been suggested that the methods of

monitoring teacher performance put forth by Race to the Top take away teachers' sense of having the trust of their principal, and may harm their motivation (Kenny, 2012).

Educators' reactions to APPR have been the focus of this research paper, however, it is important to note that there has also been backlash with regard to the Common Core curriculum standards (Ravitch, 2014; Stop, 2014). The website stopcommoncore.com summarizes concerns among educators across the nation. These include discontent with a curriculum that is overly rigid; the lack of state influence on the new curriculum; and standards that are too loosely based on the predetermined criterion of standards of other nations (Stop, 2014). Diane Ravitch is an educational historian and policy analyst who has spoken against the common core. A major objection of hers is that the process of developing the common core standards was in violation of the American National Standards Institute's principles. Ravitch states that the principles in violation include transparency, acknowledgement of interested parties and those with relevant expertise, and allowance for an appeal and revision process (Strauss, 2014). Ravitch's concerns with the common core reflect a feeling of injustice in implementation of the common core that may be felt by the teachers required to implement them (Strauss, 2014).

In the years since Common Core and Race to the Top have been implemented, some challenges have arisen due to teacher discontent with implementation (Feeney & Burris, 2011; Kenny, 2012; Sherwood, 2013). However, positive remarks about the reform effort have also been published. A report of the reform efforts' progress was published in 2014 (Miller & Hannah, 2014). This report indicated that 73% of teachers implementing the Common Core express positive emotion about the program in their classrooms, and 62% believe implementation is going well. In New York State, 77% of teachers report finding

the reform implementation to be challenging, but 69% believe that the efforts will have a positive effect on their students (Miller & Hannah, 2014). The report goes on to note that while New York State has struggled to implement the reforms effectively, Tennessee and Delaware have established efficient methods of involving local education agency representatives in the implementation.

This increased attention to the quality of teachers and the achievement of their students' is an attempt to unify what is being taught in schools in the United States, and how it is being taught (D'Agati, 2012; Miller & Hannah, 2014). Teachers have been given new requirements for the content and scope of curriculum, and greater responsibility to increase the performance of their students. This changing climate makes it pertinent to re-examine teacher motivation as it relates to increased external regulation and control. The method of regulating how teachers teach is an area that has particular relevance to teacher motivation. Accountability policies that are a part of the Race to the Top program assign a performance score to teachers. This score then contributes to hiring, firing, and retention decisions; impacts teachers in a direct way, and raises the stakes (D'Agati, 2012; Miller & Hannah, 2014).

Theories of Human Motivation

The subject of human motivation has been investigated for centuries, and has been quite diverse in theory and methodology (Adler, 1927; Aristotle, as cited in Ostwald, 1962; Deci & Ryan, 2000; John Locke, as cited in Coleman, 1983). While there are many different definitions of motivation, for the purposes of this paper, it refers to the internal and external influences on a person to think, develop, and act (Deci & Ryan, 2008). There are

many approaches to conceptualizing these influences according to drives, incentives, humanistic growth, and cognitive evaluation.

In general, theories of human motivation seek to determine the factors of the sociocultural environment that influence people to act in certain ways, perform certain tasks, and pursue certain goals (Deci & Ryan, 2000). These theories largely fall into three categories: drive theories, incentive theories, and humanistic theories. These theories take differing views of the ideal state of motivation, some view amount of motivation as the most important predictor of health (Bandura, 1996) while others take a dimensional approach, and state that the type of motivation is most important (Deci & Ryan, 2008).

Drive theories posit that humans have an innate need to establish homeostasis, or a sense of internal balance (Baard, Deci, & Ryan, 2004). According to these theories, individuals are born with needs, the satisfaction of which results in growth and health. In all cases, the source of motivation originates from within the individual. Among the earliest drive theorists was Hull (1935) who identified a set of human needs which, when met, lead to learned patterns of behavior (Deci & Ryan, 2000). According to drive theories, when a person's need is unmet, there is a feeling of internal tension. When the need is met, the tension is reduced, and the person experiences positive outcomes. Hull's theory focused on biological needs such as thirst and hunger. A person will engage in behaviors that successfully result in satisfying these biological needs. For example, they will seek out ways to obtain food and water, and repeat the behaviors that were successful (Hull, 1935). Drive theories, however, have not been able to account for all human behavior.

Incentive theories posit that humans are motivated to act in a way that will result in the attainment of a desired outcome that is external to the individual (Hockenbury &

Hockenbury, 2003). These are sometimes referred to as 'pulling' forces because the motivation to act originates from outside the individual. Incentive theories, like drive theories, also cannot account for all of human behavior.

Humanistic theories sought to explain motivation with more of a cognitive influence. These theories seek to explain human behavior, which was not explained by incentive and drive theories. They include a more complex cognitive evaluation piece, and stress the importance of psychological evaluation in motivation. Two of the most well studied humanistic theories are that of Alfred Adler (1927), and Abraham Maslow (1943).

Alfred Adler's theory of individual psychology (1927) posited that at the root of human motivation was a drive away from a feeling of inferiority toward one of superiority. However, his theory also included the importance of the social environment. Maslow's (1943) hierarchy of needs theory identified several human needs that motivate behavior. These include physiological needs, at the base of the hierarchy, and move upward toward what he termed self-actualization. In order to lead a satisfied life, Maslow theorized that individuals would need to satisfy each of these needs.

More recently, motivation research has centered on theories with more emphasis on the role of cognition on behavior (Carver & Scheier 1998; Higgins, 1996; Kasser & Ryan, 1996). These theories state that humans place psychological value and expectations on the idea of achieving goals. Furthermore, these ascribed values and expectations can be intrinsic or extrinsic (Deci, 1971). Intrinsic motivation is the idea that people voluntarily take part in activities they naturally find interesting, new, and challenging. In this case, the source of motivation originates from within the individual (Deci & Ryan, 2000). Extrinsic motivation refers to the presentation of some external stimuli as the impetus for behavior.

These stimuli often take the form of monetary incentives, rewards, or praise (Deci & Ryan, 2000). The value the individual places on said external stimuli influences likelihood of behavior, however, the source of this motivation originates outside of the individual (Deci & Ryan, 2000).

Research on the strength of extrinsic and intrinsic motivation has shown that individuals tend to be most highly motivated when the motivation is intrinsic. Furthermore, intrinsic motivation is related to better well-being, learning, and performance (Deci, Schwartz, Sheinman, & Ryan, 1981; Grolnick & Ryan, 1987). Edward Deci and Richard Ryan (2000) have summarized findings that certain environmental elements can foster or undermine intrinsic motivation. For example, a person living in an environment that is limited in resources may be prevented from accessing activities that would result in intrinsic fulfillment. They note that cognitive factors can also have this effect. For example, feeling incompetent at a certain task is likely to harm intrinsic motivation, while a feeling of earned competence can promote intrinsic motivation (Deci & Ryan, 2000).

Self-Determination Theory

Self-determination theory (SDT) combines elements of needs-based, and cognitive theories of motivation, which posits that all humans have three innate needs. According to this theory, human behavior is governed by needs for autonomy, competence, and relatedness (Deci and Ryan, 2000). Fulfilling these needs brings a sense of intrinsic motivation (IM) to a variety of life domains. IM is defined as engaging in activities for their “own sake” and because of the inherent satisfaction of doing so, rather than the achievement of rewards, sanctions, or other external consequences (Deci & Ryan, 1985,

2008). IM is associated with positive effects on the individual such as adaptive behaviors and psychological well-being (Baard, Deci, & Ryan, 2004; Deci & Ryan, 2008).

Deci and Ryan (2000), describe the psychological needs in more detail. Competence is defined as having as the ability to have an effect on the environment and attain valued outcomes within it. Competence in a teacher would require feeling that his or her actions in the school are able to lead to change that he or she feels is necessary. Relatedness is defined as feeling as though one has meaningful connections with others. For a teacher to feel related, he or she would have to feel cared for, and caring for those he or she works with. Autonomy is a sense of volition, or to be able to organize one's own experience and behavior and to have activity be aligned with one's integrated sense of self. For a teacher to feel autonomous, he or she would have to feel a sense of freedom and integration in his or her work (Deci & Ryan, 2000). Research on the strength of these needs (Deci & Ryan, 2008) has indicated that sense of autonomy has the strongest influence on an individual. An individual who feels he or she is given choice and control in daily activities will have a greater sense of IM. In contrast, when individuals are given external rewards, watched carefully, or threatened, their IM is harmed (Deci & Ryan, 2008). In an environment that promotes these needs, he or she is able to move along the natural path toward becoming more effective, connected, and complete. Conditions contrary to these needs are those perceived as overcontrolling, overchallenging, or rejecting. When an individual is in an environment rife with such conditions, he or she implements self-protective mechanisms of compartmentalizing and withdrawing. The person no longer pursues integration of self and others, and turns focus inward on the self as a reaction for their unmet needs (Deci & Ryan, 2000). Sheldon, Reis, and Ryan (1996) used hierarchical linear modeling to show

that within-person daily fluctuations in the satisfaction of autonomy and competence needs predicted within-person fluctuations in outcomes such as mood, vitality, physical symptoms, and self-esteem. In a continuation of this study, Reis, Sheldon, Gable, Roscoe, and Ryan (2000) found that variations in the fulfillment of each of the three needs (i.e., competence, autonomy, and relatedness) independently predicted variability in daily well-being. These studies support the idea that the three basic psychological needs determine positive experience and well-being in everyday life.

Culminated research has yielded a continuum of self-determined motivation that ranges from high intrinsic motivation to high external regulation (Deci & Ryan 1985; 2000; 2008; Reis et al., 2000; Sheldon et al., 1996). The place of one's motivation along the continuum allows for predictions to be made about other outcomes. At the low end of the continuum lie the less self-determined types of motivation. These are introjected regulation, external regulation, and amotivation. At the high end of the continuum lie the self-determined motivations. These are intrinsic motivation and identified regulation. Since self-determined motivation is related to positive psychological functioning (Deci, 1980), self-determined types of motivation lead to positive outcomes, whereas less self-determined types of motivation lead to negative outcomes.

SDT in Work Contexts

Research on the subject of SDT has examined its application to various work settings. Baard, Deci, and Ryan (2004) showed that employees' experiences of satisfaction of the needs for autonomy, competence, and relatedness in the workplace predicted their performance and well-being at work. The theory has been found to be related to higher job satisfaction (Blais, Briere, Lachance, Riddle, & Vallerand, 1993; Richer, Blanchard, &

Vallerand, 2002), organizational commitment and citizenship (Gagné & Deci, 2005; Lévesque, Blais, & Hess, 2004), performance, and overall well-being, and related to lower emotional exhaustion (Blais et al., 1993) and turnover intentions (Richer et al., 2002). The theory has also been supported in many work contexts. These work settings have included: Fortune 500 companies, investment banking, and psychiatric hospitals (Deci & Ryan 2008). Such research shows that within specific domains, especially those central to the lives of individuals, need satisfaction is correlated with improved well-being. Continued research has found that fulfillment of one of the SDT needs is predictive of the others. In various work settings, perceived autonomy support is predictive of fulfillment of the other psychological needs, and positive life outcomes (Deci et al., 2001). However, very little work has been done to investigate this effect in teaching contexts.

SDT in an Educational Context

The majority of research on SDT in educational contexts is interested in its application to students. Students' perceptions of the extent to which their psychological needs for autonomy, competence, and relatedness are met predicts a variety of positive student outcomes including increased academic performance, motivation, and graduation rates (Deci & Ryan, 2008; Deci, et al., 1981; Demir, 2010; Roth, Assor, Kanat-Maymont, & Kaplan, 2007; Grolnick & Ryan 1986). Teachers play a large role in fostering intrinsic motivation, according to elements of SDT, in their students (Deci & Ryan, 2002). This research has been used in teacher education programs encouraging teachers to foster these needs among students in their classroom with curriculum and instruction (Anderson, Walker, & Ralph, 2009).

Several studies have reported that students' motivation can depend on the

motivation of their teacher (Atkinson, 2000; Demir, 2010; Roth, et al., 2007). Certain teaching methods can thwart students' psychological needs, thereby decreasing their intrinsic motivation for learning and achievement as well. In a study conducted by Deci et al. (1981), students who were taught by someone with perceived high intrinsic motivation had more intrinsic motivation for learning the task. This study indicated that teachers who were perceived as supportive of student autonomy positively impacted students' motivation and self-determination.

Other studies have focused on the importance of fostering SDT needs in school reform efforts (Assor, Kaplan, Feinberg, & Karen, 2009; Deci, 2009), in achieving professional development (Grove, 2008), and in promoting confidence and career longevity among student teachers (Evelin, Korthagen, & Brekelmans, 2008; Roness, & Smith, 2010; Vermeulen, Castelijns, Kools, & Koster, 2012). Additionally, it's been found that when school personnel perceive their supervisors or agents of change as supportive of their autonomy, they experience greater intrinsic motivation (Richer & Vallerand, 1995).

Individual differences in perception have been found to influence the degree of intrinsic motivation. For example, Richer and Vallerand (1995) found that those who have a higher overall Self Determined Motivational Profile (SDMP) are more sensitive to the high autonomy support, or high controlling orientation of a supervisor. Those with a high SDMP appear to place more importance on the fulfillment of these needs.

Motivation for Teaching

The investigation of what motivates teachers to work has been ongoing for many years (Sylvia & Hutchinson, 1985). Reasons for its importance have included determining who would make a good teacher and to increase retention of good teachers. However, most

of the work on motivation in educational context has focused on how to motivate students to learn and achieve.

Some of the earliest theorists, including John Dewey (1933) and William James (1896), have supported the belief that in order to become a good learner, a student must feel a sense of genuine enjoyment in the process of learning. Research since then has discovered that the teacher plays an important role in facilitating this intrinsic motivation in the student (Roth, et al., 2007). The teacher's genuine enjoyment in learning and teaching is a crucial part of the process, which is described as a spiral between teacher and student (Csikszentmihalyi, 1997). The teacher's level of intrinsic enjoyment of teaching impacts the students' feeling of intrinsic enjoyment of learning.

The changing economic conditions prompted by World War II and loss of men from the workforce lead to a large movement of women into the workforce (Furnell, 1977). This trend did not decrease after the war, and large numbers of women continued to seek education and employment, most commonly in fields of secretarial work, food service, and teaching. Through the mid 1970s, the workforce gained more than 1 million women. This influx triggered concerns of how to select women for teaching positions. Employers began to investigate elements of effective teaching for use in screening procedures. The results of these investigations focused on career motivation. Motivational factors included perception of a challenging job, a feeling of achievement, responsibility, growth, potential for advancement, earned recognition, and enjoyment of the work itself (Myers, 1964 as cited in Furnell, 1977). Around the same time, states began enforcing laws requiring routine performance evaluations of teachers largely based on Principal ratings (Furnell, 1977).

As investigations of motivation and performance continued in many settings, unique elements of the school setting became clear. One such difference is the nature of teaching is the importance of relationships in teaching. This and other differences are likely contributing to the elevated likelihood of teachers showing symptoms of job burnout (Fernet, 2012). When the National Commission on Excellence in Education (NCEE) published "A nation at risk" in 1983, reform efforts really took off (Ozcan, 1993). This work outlined the problems in education and posed solutions to them (National Commission, 1983). Problems included the need to investigate the impact of social changes on student learning, methods of teacher evaluation, and curriculum effectiveness. It summarized the feeling at the time that the country was in need of high quality teachers and curricula. This report proposed a review of current standards, curriculum, and expectations in the research and in practice. One of the solutions to improving quality of teacher performance stated in this report was improving motivation in teachers to work hard even when external rewards are lacking (National Commission, 1983). This report further stimulated the search for what motivates teachers.

Ozcan (1993) discussed many theories of motivation, with a focus on the failed teacher incentive programs that were popular for a period of time. The failure of these programs is attributed external rewards reducing motivation, and intrinsic rewards increasing motivation. Incentives were external rewards given to teachers, contingent upon performance. Ozcan attributed the failure of these programs to a lack of research on teacher motivation and lack of objective assessment and evaluation. Research by Frase (1989) supported the idea that intrinsic motivation is more powerful than extrinsic rewards.

In an examination of what motivates teachers in 1985, Sylvia & Hutchinson concluded that incentive programs that attached salary to merit harmed motivation. They stated that teacher motivation comes from higher order needs fulfillment based on Maslow's needs hierarchy. These needs include feeling they have the freedom and responsibility to try new practices, relate socially with others, feel a sense of esteem and actualization (Sylvia & Hutchinson, 1985). In the same year, Hayman (1985), confirmed this finding, and extended it to teacher effectiveness. He stated that teachers who feel fulfilled in their higher order needs of self-actualization are the most highly motivated, and tend to be more effective teachers. Hayman used the Porter needs questionnaire (Porter & Lawler, 1968) based on Maslow's needs hierarchy to determine motivation, and student report of teacher effectiveness.

In 1990, Johnson took a qualitative look at elements of teachers' jobs, and their feelings toward them. Among the teachers she spoke with, she found that teachers have a desire to impact policy, have social connections, and avoid performance critiques. She emphasized the need teachers feel for collegial connections in supporting their teaching, and how fear of criticism and evaluation prevents honest sharing. Her participants reported feeling that the use of standardized testing and observations as indicators of performance were not a helpful source of information for them or an accurate indicator of teaching.

In 1992, Frase and Sorenson surveyed 73 San Diego School District teachers to discover the major areas related to teacher job satisfaction. They found that there are both context and content factors that relate to job satisfaction. The most important motivating factors reported included recognition and feedback, autonomy, and collegiality. They also

discussed findings that merit pay is harmful to the collaborative and cooperative nature of the school setting. When this spirit is harmed, it leads to division among faculty as well as between teachers and administrators.

In further support of the importance of intrinsic, higher order needs fulfillment among teachers, Bishay (1996), found that teachers are more highly motivated and satisfied under certain circumstances. The author used an Experience Sampling Method to assess satisfaction in various activities at various times of day. He found that teachers enjoy teaching activities most, followed by socializing activities. He found that teaching skills are greater, and more involved in the afternoon hours, and that those with more responsibility and involvement in extracurricular activities were more motivated and satisfied. Bishay suggested that these findings support the idea that highly motivated teachers are engaged in high levels of concentration, challenge, and control.

It has been suggested by other researchers (Assor, et al., 2009; Csikszentmihalyi, 1997) that efforts to improve education by exerting external control and regulation are counterproductive. Too much dictation and control in such efforts may harm intrinsic motivation and thus the quality of teaching and learning which have positive effects for the teacher and the students (Csikszentmihalyi, 1997).

Recent research on teacher motivation has shown that high motivation for teaching relates to positive outcomes such as improved efficacy, well-being, and retention (Fernet, 2012). There appear to be a variety of internal and external influences on teachers' motivation, however, internal factors such as fulfillment of higher-order needs, collegial connection, and efficacy are most powerful (Johnson, 1990; Sylvia & Hutchinson, 1985). Internal factors are thoughts, beliefs, and emotions that teachers hold regarding teaching.

These can include enjoyment and fulfillment. Internal influences are also referred to as intrinsic motivators, and refer to a sense of personal fulfillment from the job that drives teachers to teach. External factors are elements of the environment that have some effect on teachers, such as monetary rewards and praise. However the research suggests that teachers who feel an internal sense of enjoyment in their work, have better long-term career outcomes. These internal motivational factors overlap with elements of Deci and Ryan's (2000) Self-Determination theory (SDT) of intrinsic motivation.

The three major intrinsic psychological needs outlined by SDT (autonomy, competence, and relatedness) are similar to several elements of intrinsic motivation presented by other researchers. Factors such as self-efficacy and locus of control have frequently been examined in considering teachers' motivation (Fernet et al., 2008), and overlap with the SDT needs of competence and autonomy. A teacher who identifies an external locus of control would feel that he/she has little control in making his/her own decisions. A teacher who feels poor self-efficacy would most likely report feeling limited confidence in his/her skill in teaching. Therefore, it is important to consider SDT as a potentially useful lens through which to examine teachers' intrinsic motivation to teach.

SDT in Teaching

The parallels between studies of motivation for teaching and SDT provide a theoretical basis for SDT's application to teachers' work motivation, however very little work has been done as it relates to SDT (Roth et al., 2007). The fulfillment of these needs has been related to positive outcomes in several work settings, however there are many elements of the school setting and teaching as a profession that distinguish it from other work settings, such as its unique sociopolitical organization, and relational nature (Fernet,

2012). These differences, as well as a changing environmental context, warrant a direct application of SDT to teaching.

It has been suggested by many that SDT provides a relevant lens through which to examine motivation in teachers, and some have made attempts to do so (Csikszentmihalyi, 1997; Demir, 2010; Fernet, 2008; Klassen, 2012). Demir (2010) examined the impact that teachers' feeling of intrinsic and extrinsic motivation had on student engagement. She found that both intrinsic and extrinsic teacher motivation had a strong positive correlation with student engagement, although, intrinsic motivation was more predictive. In Israel, teachers' autonomous motivation (one element of SDT) was found to predict teachers' sense of personal accomplishment and students' sense of SDT, and protect against emotional exhaustion.

One of the most direct application of SDT to teachers was a study conducted by Klassen, Perry, and Frenzel (2012). These researchers adopted widely used measures of SDT components to examine the teaching experience. Through path analysis, they examined the relationships among perceived autonomy support, relatedness among teachers, relatedness between students and teachers, teaching emotions, and teachers' engagement. The researchers found that perceived autonomy support was positively correlated with the other SDT needs, engagement in, and enjoyment of teaching. In this study, SDT needs were measured using the Work-Related Basic Needs Scale (W-BNS; Van de Broeck et al., 2010). Claude Fernet (2008; 2012) has also conducted studies applying SDT needs to teaching. His focus has been on the relationship between autonomous motivation and teacher burnout. The researcher used self-efficacy as a measure of teacher competence among French-Canadian teachers. Autonomous motivation is one component

of SDT, and refers to the experience of choice in initiating behavior (Fernet, 2012). It has been found to be predictive of intrinsic motivation in the sense that an autonomy supportive work environment facilitates fulfillment of needs for competence, and relatedness (Fernet, 2012; Ryan & Deci 2000). The researchers found that low autonomous motivation is related to low efficacy and high burnout (Fernet et al., 2008). Autonomous motivation was measured with the Work Tasks Motivation Scale for Teachers (WTMST; Fernet et al., 2008). While Fernet's scale applies motivation to specific tasks for teaching, it assesses intrinsic motivation on a continuum, not the three needs components of SDT.

To summarize, intrinsic motivation as conceptualized by SDT provides a means of examining motivation for the profession of teaching. While this has been previously examined, such investigation is rare, and particularly salient in light of recent high stakes education reform. The profession of teaching is different from other work contexts such as nursing, and therefore examination of motivation for teaching requires a specific measure.

Research Questions

The purpose of this study is to directly apply SDT to teachers' intrinsic motivation for their work, and to relate it to current high-stakes educational reform policies. This reexamination of motivation for teaching is important given the relatively little work done directly applying elements of SDT to motivation for teaching. Additionally, recent legislative policies for educational reform involve accountability procedures that directly impact teachers' job role. Therefore, it is pertinent to examine any impact these changes in educational context may have on teachers' motivation. In order to achieve this, the following research questions are proposed. These hypothesized relationships are summarized in Figure 2.

R1: To what extent do teachers in New York State perceive recent high-stakes reform efforts have impacted their role in the following components of their job: class preparation, teaching, evaluation of students, and administrative tasks?

H1: Teachers will report feeling a detrimental impact of high-stakes reform efforts on their role in their job-related tasks.

R2: What is the relationship among the three SDT needs of autonomy, relatedness, and competence?

H2: There will be a strong positive relationship among the three needs, with the correlations of competence with autonomy and relatedness with autonomy being higher than the correlation between needs of competence and relatedness.

R3: What is the relationship between overall perceived impact of high-stakes education reform and satisfaction of the major SDT needs?

H3: As overall perceived impact increases, the satisfaction of autonomy, relatedness, and competence will decrease, with autonomy having the strongest inverse relationship with impact.

R4: What is the relationship between autonomy satisfaction and perceived impact on each of the four work tasks?

H4: As perceived impact on each of the work tasks increases, autonomy satisfaction will decrease.

Chapter 3: Method

Participants

Participants were 195 teachers in public school grades preschool through 12 across New York State. Participants were 40 males and 155 females from 8 counties across the state: Cortland, Jefferson, Lewis, Ontario, Seneca, Niagara, Wayne, and Erie (see Figure 1). These counties represent a wide geographic sampling of the state, and therefore it is expected that the results will be quite generalizable to the rest of the state.

Teachers from the Lower Hudson and Long Island regions were not included in this study because of the difference in economic conditions and political opinion between public schools close to New York City, and those in Upstate and Western New York. By controlling for these differences in sample selection, it is expected that the counties included in the study should not differ significantly in their perceived impact of high stakes education reform.

All descriptive demographic information is summarized in Table 1. To further enhance generalizability, the ratio of female to male participants in our sample is representative of the larger population. In our study, 79.5% of respondents were female while 20.5% were male. This is similar to the 2011-2012 Digest of Education Statistics (2013) report that 76.3% of teachers across the United States were female and 23.7% were male.

Instruments

Perceived Impact

In order to measure the degree of perceived impact of high-stakes education reform felt by teachers, participants were asked ten self-report items. These items assessed

perceived impact in four tasks for the profession of teaching. The tasks were selected as most essential to the profession of teaching based on a review of the literature, and existing measures of teaching tasks (Fernet et al., 2008). These items are described below, and can be found in Appendix A.

The four tasks for the teaching profession were obtained from Fernet's (2008) Work Tasks Motivation Scale for Teachers (WTMST). These four tasks were class preparation, teaching, evaluation of students, and administrative tasks. In order to obtain a more detailed response, the measure was adapted, and teachers were asked about various elements of each task. On the original measure, these various elements were listed as specific examples of each of the four tasks. In order to obtain more specific information about teacher perception, each of these examples was broken out into its own item. There were three elements of class preparation (i.e., deciding on instruction topics and material, determining the presentation forms and sequence, and establishing the work procedure). They were asked about three elements of teaching (i.e., presenting instruction, answering questions, and listening to student needs). They were asked about two elements of evaluating students (i.e., constructing assessments and exams, and correcting or grading assessments and exams). Participants were also asked about two elements of administrative tasks (i.e., recording and transmitting student data, and participating in meetings with teachers, parents, or administrators).

Response options were designed to assess the degree of perceived impact on a five-point Likert scale (great and beneficial impact, some beneficial impact, no noticeable impact, some manageable impact, overwhelming impact). Scoring of the adapted WTMST involved calculating a mean score for each task, and an overall mean perceived impact

score. Validity for the four tasks and overall impact score was calculated for the present sample through the confirmatory factor analysis (CFA) technique using the Mplus program. These results are reported in Tables 2 – 5, and discussed in the results section of this paper.

Motivation

In order to measure teachers' intrinsic motivation for their work as teachers, participants were asked 18 self-report items. Motivation was conceptualized in terms of Deci and Ryan's (2000) Self Determination Theory of intrinsic motivation and its three major needs: autonomy, competence, and relatedness. In order to measure teachers' perceived satisfaction of these needs in their jobs, the Work-Related Basic Need Satisfaction scale (W-BNS; Van den Broeck et al., 2010) was used. This measure can be found in Appendix B. This is an 18-item scale designed to measure perceived autonomy, relatedness and competence at work. This scale provides a domain-specific estimate of satisfaction in autonomy, relatedness, and competence. Six questions for each need are rated on a five-point Likert-type scale (See Appendix B). Response options range from "Totally disagree" to "Totally agree." Scoring of the W-BNS involved reverse coding the negatively worded items, then calculating a mean score for each of the three need domains, and an overall perceived mean impact score.

This scale has previously been found to have acceptable reliability for each subscale: Cronbach's alpha on autonomy ranged from .77 to .84, competence from .79 to .90, and relatedness from .76 to .84 (Van den Broeck et al., 2010). These subscales were found to have discriminant validity, and criterion validity. Three goodness of fit indices were used and supported a three factor model with each factor averaging item loadings of .67, at a $p < .001$ significance level. Construct validity data was obtained from significant predicted

correlations between the scale and the predicted variables of engagement, anxiety and anger. Further support for this measure's reliability has been found by Klassen (2012), who used the measure with a population of teachers. Among this population, average Cronbach's alpha were found to be .77 on the subscale of autonomy, .84 in the competence subscale, and .78 on the relatedness subscale (Klassen, 2012). Construct validity for the three needs scores was calculated for the present sample through the confirmatory factor analysis (CFA) technique using the Mplus program. These results are reported in Tables 2 – 5, and discussed in the results section of this paper.

The measures described above were also used to answer the third research question, "What is the relationship between overall perceived impact of high-stakes education reform and satisfaction of the major SDT needs?," and the fourth research question, "What is the relationship between autonomy satisfaction and perceived impact on each of the four work tasks?"

Demographics

When considering the type of demographic information to obtain, it was important to consider the level of comfort participants would have in reporting personal information. The items on the measures described above require disclosure of personal opinions about participants' place of employment, some of which could be expression of discontent. It was suspected that participants would be less willing to provide those honest opinions if they felt their responses could be tied back to them. Therefore, in order to minimize social desirability bias and protect participant anonymity, specific identifying information was not obtained. However, there were certain demographic variables of interest in the present study. Participants were asked to report the following demographic information: gender,

number of years teaching, current teaching grade level, and county in which they teach (See Appendix C).

Gender was obtained from participants because of the well-documented overrepresentation of females in the teaching profession. It is of interest to know if there are differences in the perceptions of male versus female teachers. It has previously been reported that there are no significant differences between male and female reports of motivational factors (Kocabas, 2009), however it is beneficial to collect this data and control for this variable.

Procedure

Institutional Review Board (IRB) approval from Alfred University's Human Subjects Research Committee was obtained in December of 2014, prior to contacting participants. All items from aforementioned measures were compiled into an online survey using the electronic survey tool, Survey Monkey. Informed consent appeared as the first item on the survey, which informed participants that their responses would be anonymous and email addresses would be kept confidential. The informed consent used in the study can be found in Appendix D. In December of 2014, the researcher was awarded the Lea R. Powell grant for research of \$500. This grant money was used to obtain participant incentives, and to pay for the electronic survey account subscription. Incentives took the form of 45 \$10 Amazon electronic gift cards. At the conclusion of the survey, participants were directed to a separate link to provide an email address to be entered into a raffle for the incentive prizes. Gift cards were emailed to 45 randomly selected participants at the conclusion of the study. Participant emails were not associated with individual survey responses.

In January of 2015, 62 teachers throughout New York State were contacted. Contacts were made from many regions across the state, with the exception of the Lower Hudson and Long Island regions. Teacher contacts were obtained through the NYS Teacher center directory website. Contacts were sent a link to the survey, and asked to send the survey on to other teachers who might be interested in participating. After two weeks, responses were reviewed. In order to obtain a wider geographical spread of respondents, additional contact was made requesting dissemination of the survey to teachers in Erie County. In February of 2015, the survey was closed with a 195 participants. The 45 raffle winners were randomly selected through random number assignment, and claim codes for Amazon electronic gift cards were emailed to recipients. All data was exported from Survey Monkey into an excel file for analysis.

Data Analysis

The major objectives of this study are to describe teachers perception of the current educational context, examine the applicability of SDT among teachers, and examine relationships that may exist between these two overarching variables. The major variables of concern are 1) perceived impact of high-stakes education reform and 2) intrinsic motivation. In the present study, the researcher hypothesized certain relationships between and within these variables based on the existing research. In order to test the accuracy of these hypotheses, a number of statistical analyses were performed. These included structural equation modeling (SEM) with latent variables, one-way ANOVA and tests of least significant difference (LSD), one-sample *t*-tests, and Pearson's correlations.

Prior to evaluating the previously presented research questions, it was important to understand if there were any significant difference between participant demographic

variables and outcome variables. It is common in applied research in the social sciences for variables to be nested. Nested variables exist when participants share similar characteristics because of a pre-existing structure. For example, the teachers in one school district or county have different administrative and socio-political influences. If these variables are not identified, they can lead to biased results. In the present study, participants were asked to report their gender, number of years they had been teaching, grade level they teach, and the county in which they teach. However, they were not asked to identify the school district in which they teach. Therefore, it is possible that teachers within the same county could be from the same school. A series of one-way ANOVA and tests of least significant difference (LSD) were conducted to examine differences in outcome variables based on participant demographic variables. Tests of LSD were determined to be significant with a p -value of less than .05.

In order to answer the first research question, "To what extent do teachers in New York State perceive recent high-stakes reform efforts have impacted their role in the following components of their job: class preparation, teaching, evaluation of students, and administrative tasks?," one-sample t -tests were conducted to determine whether the difference in teachers' reported impact of high-stakes education reform was significantly different from a null of "no noticeable impact."

Pearson's correlations were performed to answer the second research question, "What is the relationship among the three major SDT needs of autonomy, relatedness, and competence?," as well as the fourth research question, "What is the relationship between autonomy satisfaction and perceived impact on each of the four work tasks?"

A combination of confirmatory factor analysis (CFA) and structural equation modeling (SEM) was performed to examine the data and answer the research questions. CFA was used to test the validity of the scores used as outcome variables (overall perceived impact and overall motivation). Structural equation modeling was used to answer the third research question, "What is the relationship between overall perceived impact of high-stakes education reform and satisfaction of the major SDT needs?" Testing these hypothesized relationships required examining relationships between overall motivation, its components (autonomy, competence, and relatedness), and overall perceived impact. SEM was selected as the preferred statistical analysis over multiple regression because it allows for simultaneous regression and confirmatory factor analysis (CFA). A deeper discussion of the CFA technique and its application is presented below.

Confirmatory Factor Analysis

The Confirmatory factor analysis (CFA) technique is a type of structural equation modeling (SEM) that is widely accepted as an efficient means of hypothesis testing, and is commonly used in applied research (Cole, 2012). CFA has been documented as an effective means of confirming factor structures of existing measures when applied to a new population or sample (Wang & Wang, 2013). The analysis yields two important types of statistics: fit indices and factor loadings.

Fit indices are categorized as absolute or incremental. Absolute fit indices represent the ratio of difference between the theorized model and the actual model the data presents. Incremental fit indices represent a comparison of the correlation of the observed model with a baseline model in which all variables are uncorrelated (Hooper, Coughlan & Mullen, 2008). Factor loadings reveal the strength of each of the observed variables in relation to

the latent, or theorized variable. In other words, the relationship between the items measured and the theorized factor is represented as a factor loading. Specifically, the factor loading is a coefficient of the slope of the regression line between the item and the overall variable, taking into account error in the measurement (Cole, 2012). CFA is useful for testing the accuracy of a theorized factor model under investigation, as is the case in the present study.

When examining model fit, an examination of several fit indices is recommended (Hooper et al., 2008). It is generally accepted that at least three fit indices be reported (Wang & Wang, 2013). In the present study, chi square and root mean square error of approximation (RMSEA) are reported in text; standard root mean ratios (SRMR) and comparative fit indices (CFI) are reported in the tables. In addition the R^2 coefficient of determination for the model is provided, which represents the percent of variance in data the model accounts for. The R^2 coefficient was also used as a measure of effect size.

The chi-square indicates the discrepancy between the observed covariance matrix and that of the theorized model. If the p value of chi-square is greater than the chosen alpha level of .05, one can accept the null hypothesis that the models are quite similar (Hooper et al., 2008). RMSEA is an absolute fit index representing the square root of the average of the covariance residuals. In general, values less than .07 are acceptable (Hooper et al., 2008). More specifically, .01 is considered to be an excellent fit, .05 is a good fit, and .08 is a reasonable fit (Hyland, n.d.). The SRMR is an absolute fit model representing the standardized difference between the observed correlation and the theorized correlation. Generally, a SRMR value of less than .08 is considered to be acceptable. The CFI is an incremental fit index that compares the correlations in the observed model with a null

model in which all variables are uncorrelated (Hooper et al., 2008). The statistic is acceptable if the CFI is greater than .85 (Hyland, n.d.). It is considered best practice to accept the overall model as a good fit if at least two of the fit indices meet the acceptable threshold (Hooper et al., 2008).

Factor loadings represent the strength of the relationship between the observed variables and latent variables. They indicate the amount of variance shared between the observed and latent variable (Brown, 2015). When examining factor loadings, it is possible to consider standardized or unstandardized estimates. Unstandardized estimates use the same parameters as the variables. Standardized estimates have a mean of 0 and standard deviation of 1. Standardized estimates were examined in the present study. Those with an absolute value greater than .3 or .4 are considered salient, and indicate a strong relationship between the variables (Brown, 2015).

In the present study, it was first necessary to test the validity of the theorized model that overall mean impact would be an acceptable latent model based on the observed variables. The observed variables were the 10 items adapted from the WTMST. Four task mean scores were calculated from these 10 items. It was theorized that these four task mean scores would comprise an overall mean score of task impact. CFA was conducted to obtain fit indices measuring how well these four task mean scores load into one overall mean impact score, as well as to obtain factor loadings indicating the extent to which each of the four task means contributed to the overall mean impact score.

Secondly, CFA was used to test the validity of the theorized model that overall motivation was an acceptable latent variable based on the observed variables. The observed variables were the 18 items from the W-BNS. Three mean need scores were

calculated from these 18 items. It was theorized that these three mean need scores would comprise an overall mean score of motivation. CFA was conducted to obtain fit indices measuring how well these three mean need scores fit into the latent variable of overall motivation. This analysis also provided factor loadings indicating the extent to which each of the three mean need scores contributed to the overall mean score of motivation.

It was necessary to also examine a structural model in order to test the third research question, and the hypothesized model of each of the three needs (autonomy, competence, and relatedness) relating to overall impact. Three separate analyses were conducted. The observed variables in each analysis were the four tasks and overall impact. In the first, the latent variable was sense of autonomy, in the second, it was sense of relatedness, and in the third it was sense of competence. These variables were examined separately because examining the nature of each of the SDT needs was important to the research questions. It was more important to understand how each of these needs individually related to perceived impact than to examine the variable of overall motivation.

Chapter 4: Results

Demographics

A series of one-way between-groups ANOVAs were performed to determine if there were significant differences between demographic survey items, and the perceived impact task scales or Self Determination Theory (SDT) needs scales. Tests of least significant difference (LSD) were also performed to more precisely analyze the difference between the variable means for ANOVAs with significant F values. These tests helped to identify patterns in participant responses based on shared characteristics.

Tests of one-way ANOVA and LSD revealed no significant differences between participants based on county in which they were teaching. It is therefore safe to conclude that there were no inherent differences between outcome variables based on county, and no further analyses were performed to account for this when examining the research questions. These results suggest that in the present sample, there were no inherent differences in teacher perception of high-stakes education reform, or in SDT needs between the counties involved in this study.

Differences in some dependent variables were found based on responses to other demographic items. These demographic items were: number of years of teaching experience, grade teaching, and gender. Results of these one-way ANOVAs are reported in Table 2. Number of years teaching differentially affected degree of perceived impact of education reforms on tasks for teaching and sense of competence. However, number of years of experience did not differentially affect perceived impact of education reforms on teachers' involvement in administrative, class preparation, or student evaluation tasks; sense of relatedness or autonomy. The grade level in which teachers reported working

differentially affected their fulfillment of their SDT need for relatedness as well as their overall SDT need fulfillment score. However, grade level did not systematically relate to differences in teachers' perceived impact of education reform efforts, nor did it relate to their fulfillment of autonomy or competence needs. Gender predicted differences in reported fulfillment of the SDT need for relatedness only. Gender did not predict differences in perceived impact of reform efforts or the SDT needs of competence and autonomy.

It was revealed that teachers in the first 5 years of their careers as well as those who had 25 or more years of experience reported feeling less detrimentally impacted by high-stakes education reform. When years of teaching experience was the independent variable, one-way ANOVA and tests of least significant difference revealed significant differences between participants in the variables of mean perceived impact on teaching tasks and mean competence need fulfillment (see Table 2). When examining differences in mean perceived impact on teaching tasks, teachers who reported having between 15 - 25 years of experience teaching ($M = 2.24$) were significantly higher than teachers with less than 5 years ($M = 1.68$), and than teachers with more than 25 years of teaching experience ($M = 1.79$), $F(3, 190) = 3.135, p = .027$. Teachers with between 5 - 15 years of teaching experience reported perceived impact scores that were not significantly different from the other groups of teachers ($M = 1.99$). These tasks specific to teaching include presenting instruction, answering student questions, and listening to student needs. These results indicate that teachers who are quite near the beginning or end of their careers, perceive less of a detrimental impact of recent high-stakes education reform on their direct involvement with students than teachers in the middle on their career.

Teachers with more than 25 years of experience reported significantly higher feeling of competence in their jobs than those with fewer than 15 years. When examining the differences in mean competence need, teachers with more than 25 years of experience teaching ($M = 3.42$) reported need fulfillment scores significantly higher than teachers with less than 5 years of experience ($M = 2.92$), and teachers with between 5 - 15 years of experience ($M = 3.10$); $F(3, 190) = 3.308, p = .021$. In this sample, teachers with more than 25 years of experience were the most likely to report feeling confident in their ability to successfully carry out challenging aspects of their jobs. On the other hand, early career teachers are least likely to feel confident in their abilities to master aspects of teaching.

Surprising differences in sense of relatedness were found among teachers based on grade level. It was apparent that teachers of grade 4-5 reported significantly lower satisfaction of this need for meaningful connections with colleagues. When the independent variable was grade level teaching, one-way ANOVA and tests of least significant difference revealed significant differences between participants in the variables of mean relatedness need fulfillment, and overall mean SDT need fulfillment. These results are summarized in Table 3. When examining differences between participants within mean need for relatedness, teachers of grades 4 - 5 ($M = 2.41$) reported scores significantly lower than teachers of grades K - 3 ($M = 2.92$), and teachers of grades 6 - 8 ($M = 2.93$), $F(4, 187) = 3.07, p = .018$. In this sample, teachers of these late elementary-early middle school grades reported feeling the least sense of meaningful connection with their colleagues. This relatedness score influenced the overall mean SDT score, and similar results were revealed.

When examining differences in overall mean overall SDT need fulfillment, teachers of grades 4 - 5 ($M = 2.41$) were significantly lower than teachers of grade 6 - 8 ($M = 2.82$), F

(4, 187) = 2.59, $p = .038$. This indicates that teachers of grades 4 – 5 felt less fulfilled, according to Self Determination Theory, than teachers of other grades, particularly those teaching grade 6 – 8. It was evident that in this sample, teachers of grade 6 – 8 reported the highest overall motivation according to SDT needs fulfillment. In this sample, teachers of grades 4 – 5 felt less fulfilled than teachers of other grades in their need for relatedness. Their low fulfillment in this need was a factor in their overall motivation score, and contributed to an overall motivation score that was also lower than teachers of other grades.

The only difference in dependent variable between teachers based on gender were that male teachers reported lower satisfaction of the SDT need for relatedness than female teachers. When the independent variable was gender, one-way ANOVA revealed significant differences in the mean need for relatedness variable $F(1, 193) = 4.77, p = .030$. These results are summarized in Table 4. Males' reported mean need for relatedness ($M = 2.47$) was significantly lower than females' ($M = 2.81$). In this sample, male teachers were less likely to identify with, and feel a close connection to their colleagues.

Correlation

Pearson's test of correlation was also conducted to obtain an alternate understanding of the strength and nature of the relationship between overall perceived impact and each of the three SDT needs. The correlation matrix is presented in Table 6. There was a significant negative correlation between mean perceived impact and mean sense of autonomy ($r = -.473; p < .01$). This is considered to be a moderately strong relationship. There was also a significant, although weak, inverse relationship between

mean impact, and mean sense of competence ($r = -.226, p < .01$) and relatedness ($r = -.181; p < .05$).

Variable Structure

Confirmatory factor analysis (CFA) provides an acceptable means of obtaining construct validity (Hyland, n.d.). It was necessary to determine the validity of the scores used with the present sample. This was accomplished by examining fit indices and standardized factor loading scores for the adapted WTMST and the W-BNS. The illustrated resulting model including factor loading scores can be found in Figures 3 and 4.

CFA was first used to test the validity of the assumption that the scores representing fulfillment of the need for autonomy, competence, and relatedness contributed to the overall motivation score. The proposed model of the overall mean score of motivation as a latent variable comprised of the three mean need scores was accepted as a perfect fit ($\chi^2 = 0.000; df = 0; RMSEA = 0.000$; see Tables 7 and 8). All standardized factor loadings were significant at the $p < .0005$ level, and autonomy had the strongest factor loading ($\beta = .810$), while relatedness ($\beta = .523$) and competence ($\beta = .516$) had moderate contributions (see Figure 3). Together, this model accounted for 65.6% of the variation in participant responses, and a large effect size ($R^2 = .656$). These scores represent the construct validity of the W-BNS mean need scores and overall motivation score for the present sample. This analysis also indicates that sense of autonomy was the strongest predictor of overall motivation in this sample.

CFA was also performed to examine the validity of the assumption that the mean scores used to represent perceived impact of high stakes education reform on four teaching-related tasks did in fact comprise an overall impact score. The proposed model of

the overall mean impact score as a latent variable comprised of the four task impact scores was accepted as a good fit ($\chi^2 = 4.045$; $df = 2$; RMSEA = 0.072; see Tables 7 and 8).

Standardized factor loading scores reveal the extent to which each of the four task means contributed to the overall mean impact score. These scores represent the construct validity of the adapted WTMST for the present sample. The class preparation ($\beta = .861$), teaching ($\beta = .834$), and student evaluation ($\beta = .813$) task impact scales had significant ($p < .0005$) and strong contributions to the overall impact score (see Figure 4). The administrative ($\beta = .665$) task impact scale had a significant and moderate contribution. Together these four task impact scores explained 44.2% of the variance in participant responses, with a large effect size ($R^2 = .442$). These results indicate that further analyses using the overall mean impact score would be a statistically acceptable representation of teachers' perceived impact on each of the four tasks.

Research Question One

In order to answer the first research question, "To what extent do teachers in New York State perceive recent high-stakes reform efforts have impacted their role in the following tasks: class preparation, teaching, evaluation of students, and administrative tasks?" mean scores for each of the tasks were reviewed using confirmatory factor analysis (CFA) and *t*-tests. CFA results reported previously confirmed the validity of the assumption that the scores used to assess perceived impact of high stakes education reform on four teaching-related tasks did in fact comprise the overall impact score used.

Possible scores on the adapted WTMST ranged from 0 – 4 with a score of 2 representing a perception of "no noticeable impact." A score of 0 represented "significant and beneficial impact," and a score of 4 represented "significant and detrimental impact."

On this measure, teachers who report scores closer to 4 feel greater and more harmful effects of high stakes education reform efforts. Participants reported mean perceived impact of high stakes education reform efforts on their job-related tasks as follows: class preparation ($M = 2.152$; $SD = 1.031$), student evaluation ($M = 2.050$; $SD = 1.113$), teaching ($M = 2.392$; $SD = .903$), and administrative ($M = 2.0$; $SD = 1.005$). These mean scores ranged from “no noticeable impact” to “some detrimental impact” (see Table 6).

One sample *t*-tests were performed to determine if teachers’ mean scores on this measure were significantly different from the null hypothesis of high stakes education reform having “no noticeable impact.” A one-sample *t*-test was conducted for each of the four tasks’ mean reported score, using a test value of 2.00. Teachers’ reports were significantly different than the null in mean perceived impact on student evaluation tasks $t(193) = 4.901, p < .0005$, and administrative tasks $t(194) = 2.208, p = .028$. However, they were not significantly different than the null in mean perceived impact on class preparation $t(195) = .683, p = .496$, or teaching tasks $t(195) = .000, p = 1.0$. Therefore, it can be said that teachers in this study felt a harmful impact of education reform efforts in some specific components of their jobs, but not others.

Teachers were most likely to report a detrimental impact when asked about their role in evaluating students (i.e., constructing, correcting, and grading assessments and exams) and participating in administrative tasks (i.e., recording and transmitting student data, and participating in meetings). These tasks are more supplemental to teaching than their role in class preparation (i.e., deciding on topics, material, and presentation form and sequence) and teaching tasks (i.e., presenting instruction, listening and responding to student needs), in which teachers were less likely to report feeling a detrimental impact of

education reform. This partially supports the hypothesis that teachers would report feeling a detrimental impact of high stakes education reform. They reported feeling their role in evaluating students and administrative tasks were impacted in a harmful way. Their reported amount of detrimental impact on class preparation and teaching tasks was not significantly different from a score of “no noticeable impact.”

Research Question Two

The second hypothesis was supported in the finding of a strong positive correlation among the three needs, with the strongest relationships between fulfillment of the need for autonomy and competence, and between autonomy and relatedness. In order to answer the second research question: “What is the relationship among the three major needs of autonomy, relatedness, and competence?,” confirmatory factor analysis (CFA) and Pearson’s correlations were conducted. CFA results reported previously confirmed the validity of the assumption that the items used to assess satisfaction of the three major SDT needs did in fact comprise an overall motivation score. Standardized factor loadings from the CFA were reviewed, and Pearson’s correlations were performed to test the hypothesis that there would be a strong positive relationship among the three SDT needs.

Support for the hypothesized model was found from the results of CFA when all standardized factor loadings were significant at the $p < .0005$ level, and autonomy had the strongest factor loading ($\beta = .810$), while relatedness ($\beta = .523$) and competence ($\beta = .516$) had moderate strength in their relationship to overall motivation. This data indicates that autonomy as the strongest predictor of overall motivation. To completely answer the research question required investigating the relationship between autonomy, competence and relatedness through calculation of Pearson’s correlations.

Descriptive statistics for the mean need scores of competence, relatedness, and autonomy can be found in Table 6. Possible scores ranged from 0 – 4, with a score of 2 representing a neutral response of “somewhat disagree / somewhat agree.” Participants reported mean needs fulfillment scores as follows: relatedness ($M = 2.736$; $SD = .884$), autonomy ($M = 2.040$; $SD = .789$), and competence ($M = 3.176$; $SD = .652$).

The Pearson’s correlation coefficients that resulted from the analyses indicated moderate positive correlations between autonomy and competence ($r = .418$), and autonomy and relatedness ($r = .424$; see Table 5). A significant, but low positive relationship was found between competence and relatedness ($r = .270$; $p < .01$). These results support the hypothesis that there would be a strong positive correlation among the three needs, with sense of autonomy having the strongest relationship with competence and relatedness.

Research Question Three

The third hypothesis was supported when fulfillment of the need for autonomy was found to be the strongest predictor of teachers’ perceived impact of education reform efforts. To answer the third question: “What is the relationship between overall perceived impact of high-stakes education reform and satisfaction of the major SDT needs?,” structural equation modeling (SEM) was conducted. SEM was used to test the hypothesized model of autonomy, competence, and relatedness contributing to the latent variable of overall impact.

Three separate analyses were conducted to test the strength of autonomy, relatedness, and competence as separate models predicting overall impact. The results indicated that the model of autonomy predicting overall mean perceived impact was an

excellent fit ($X^2 = 5.108$; $df = 5$; $RMSEA = 0.011$; See Tables 9 and 10). The fit statistics for this model were far from the threshold of acceptability, indicating better fit. Autonomy was related to overall impact with moderate strength ($\beta = -.510$). This model accounted for 26% of the variability in scores, and had a large effect size ($R^2 = .26$). The model of relatedness predicting overall mean perceived impact was accepted as a good fit ($X^2 = 7.165$; $df = 5$; $RMSEA = 0.047$; Tables 9 and 10). However, fit statistics approached the threshold of acceptability. The model of competence predicting overall mean perceived impact was also accepted as a good fit ($X^2 = 6.622$; $df = 5$; $RMSEA = 0.041$; see Tables 9 and 10). Competence had a weak relationship with overall impact ($\beta = -.253$). This model accounted for only 6.4% of the variability in responses, and had a small effect size ($R^2 = .064$). Relatedness was weakly related to overall impact ($\beta = -.188$). This model accounted for only 3.5% of the variability in responses, and had a small effect size ($R^2 = .035$).

The model of autonomy predicting overall mean perceived impact had an excellent fit. This indicates that satisfaction of the need for autonomy is strongly related to teachers' perception of a detrimental impact of high-stakes education reform efforts on their work tasks. Autonomy was also the need most strongly related to overall motivation, as indicated by previously reported CFA results. The predictive ability of this variable has been previously found in the research. Since autonomy was found to be a strong predictor, it was acceptable for use as the dependent variable to examine perceived impact on each of the four tasks.

Research Question Four

Support was found for the hypothesis that teachers who perceived less satisfaction of their need for autonomy would perceive a more detrimental impact of education reform efforts. To answer the fourth research question, “What is the relationship between autonomy satisfaction and perceived impact on each of the four work tasks?” Pearson’s correlations were conducted. The previously reported CFA for overall motivation as a latent variable for the SDT needs of relatedness, autonomy, and competence indicated that autonomy was the strongest predictor of overall motivation. This finding supported what has been found in previous research. It was hypothesized that as perceived impact on each of the four work tasks increased, autonomy satisfaction would decrease.

Pearson tests of correlation were conducted to understand the strength and nature of relationship between autonomy and impact on the four tasks. These results are presented in Table 5. This test revealed significant inverse relationships between autonomy and the four tasks ($p < .01$). Strong relationships in correlation range from absolute value of 0.7 to 0.9, while moderate relationships in correlation range from absolute value of 0.4 to 0.6. Pearson’s test of correlation revealed moderate inverse relationships between autonomy and class preparation tasks ($r = -.464$), teaching tasks ($r = -.404$), and student evaluation tasks ($r = -.405$). A significant but weak inverse relationship was found between autonomy and administrative tasks ($r = -.333$). These findings support the hypothesis that there would be an inverse relationship between autonomy satisfaction and perceived impact on each of the four job tasks. However, the relationship between autonomy and impact on administrative tasks was weak in this sample.

Chapter 5: Discussion

Summary

The purpose of this study was to present the existing literature on intrinsic motivation among teachers, and apply it to the current educational context of high-stakes education reform. Efforts are considered “high-stakes” because they place greater scrutiny on teachers’ daily practice, and tie higher consequences to the performance of their students. It is the goal of this research that its results may promote an understanding among educational professionals and those in a position of decision-making. Many teachers throughout New York State have vocalized their dissatisfaction with recent reform, however, little has been done to address teachers’ concern. This research seeks to clarify the problem, and begin to identify solutions.

There were many interesting findings from this study. Most importantly was the finding that teachers perceived recent high-stakes education reform effort to have had some detrimental impact on their abilities to carry out their job-related tasks. At the outset of this study, teacher discontent with education reform was receiving a great deal of media attention. This made it clear that there had been a change in the way teachers were viewing their profession. However, it was unclear exactly the extent of the impact these reform efforts could be having on teachers. The present study has successfully answered this question, and not only indicated that teachers are dissatisfied, but that they have noticed a measurable, harmful impact of these reforms on their ability to complete some of their daily tasks.

Other important findings included that teachers nearest the beginning or end of their careers were less likely to report experiencing detrimental impacts of reform efforts.

In addition, the framework of Self-Determination Theory (SDT) was maintained. Sense of autonomy was the strongest predictor of need for relatedness and competence. This similarity allows for inferences to be made based on other SDT research. Satisfaction of the need for autonomy at work has been previously found to relate to various life outcomes. In this study, it was found to relate to perceived impact of education reform efforts on several components of their jobs.

Teachers were asked to report the degree of impact they had felt from recent education reforms. Recent reform efforts in New York State have included the 2001 No Child Left Behind Act (NCLB), and the 2010 Common Core curriculum standards and the federal Race to the Top initiative. NCLB required standardized testing for all students in grade 3-12 (United States, 2002). The Common Core Standards are a set of academic standards and goals for student achievement in math and literacy (Common Core, 2014). The Race to the Top reform initiative required teacher evaluation based in part on student achievement on standardized tests of achievement. Taken together, these reform efforts have increased the expectation of achievement for students and the responsibility for teachers in accomplishing this, thereby changing aspects of the profession of teaching. Educational reforms have been poorly received by many educational professionals in New York State, who have voiced discontent with the increased level of external control instated by these reforms. The current study attempted to scientifically measure the extent of the perceived impact of these reforms on teachers' job-related tasks, autonomy, competence, and relatedness.

Conclusions

There were interesting differences in some of the outcome variables based on participants' characteristics. These differences existed based on number of years teaching, grade teaching, and gender. Teachers with less than 5 and more than 25 years of teaching experience reported the least detrimental impact of recent high-stakes education reform on their tasks for teaching. This suggests there may be protective factors present among early- and late- career teachers.

One possible explanation for this finding is the timing on these reform efforts relative to these teachers' careers. Teachers with less than 5 years of teaching entered the field in 2010, when recent reform efforts had already been in place. Perhaps these teachers did not have to adjust to a new way of doing things rather, they have always known the profession to be this way. Alternatively, it could be that teachers entering the field within the last 5 years have been prepared for high-stakes testing and accountability practices while they were in their training programs and student-teaching experiences. The profession of teaching may be relatively unchanged from this early-career-groups' perspective, or high-stakes education reform efforts have been presented to them in a way that allowed a greater feeling of competence.

Another difference between participants in the outcome variables was found based on the grade level they reported presently teaching. Teachers of students in grades 4 – 5 reported the lowest mean relatedness need fulfillment, and overall mean SDT need fulfillment. In mean need for relatedness, teachers of grades K – 3 and 6 – 8 reported significantly higher relatedness need fulfillment than those of grade 4 – 5. When it came to overall motivation, teachers of grade 4 – 5 continued to be the least fulfilled of the

participants. It is important to consider possible reasons why teachers of these late elementary-early middle school grades felt the least sense of meaningful connection with their colleagues.

Perhaps there are building-level differences in the schools these teachers work that make them feel separate from other teachers. Another possible explanation could be due to the comprehensive nature of teaching in grades 4 – 5. Teachers of grades 6 – 8 typically teach one core subject area, so they have a more specialized area of material to prepare instruction for, while teachers of grades 4 – 5 are typically responsible for delivering all core subject area instruction their students. It is worth consideration that this unique difference could have contributed to a feeling of social isolation among this group of teachers. It is important that future research investigate differences in the nature of teaching between grades 4 – 5, and 6 – 8.

The final difference between participants in the outcome variables was found based on gender. Specifically, males reported lower fulfillment of the need for relatedness than females. However, this difference was not large enough to produce differences in overall motivation scores between males and females. In this sample, male teachers were less likely to identify with, and feel a close connection to their colleagues. Male teachers in this study did not report a deficit of sense of relatedness, rather, they rated themselves closer to the null, “somewhat agree/ somewhat disagree” than females. Therefore, this finding should not be interpreted as indicating male teachers’ need for relatedness is unfulfilled, rather, they are more likely to report more ambivalent feelings about their connection with other colleagues than teachers. The relationship between gender and sense of relatedness has not previously been explored. However, females have historically been the majority in

the profession of teaching. It is reasonable to infer that males may have fewer same-gender colleagues with whom they feel a sense of close connectedness. Kocabas (2009) previously found similarities in sources of motivation between male and female teachers with two exceptions. In Kocabas' study, females reported placing greater importance in recognition and being viewed as a role model than males did.

Several important findings came about when investigating the research questions. Of the greatest importance was the finding that teachers reported feeling a detrimental impact of high-stakes reform efforts on their role in some of their job-related tasks as measured by the adapted version of the WTMST (Fernet, 2008). Specifically, teachers reported this impact on student evaluation and administrative tasks, but not on their role in class preparation and teaching tasks.

Administrative tasks included recording and transmitting student data, and participating in meetings. Student evaluation tasks included creating and grading student assessment materials. It is evident from the results of this study that teachers feel additional pressure in these specific areas of their jobs. High-stakes education reforms have put pressure on teachers to adjust their practices and adopt new tests to match standardized curriculum guidelines, and to document and communicate their practices with others. The intention of education reform efforts was to create positive certain positive outcomes including better teaching practices, and higher performing students, but this study reveals that teachers have felt negative outcomes on aspects of their jobs.

A second important finding of this study was that the framework of Self-Determination Theory (SDT) maintained a structure similar to its application to other work fields. The profession of teaching is different from other work contexts such as finance,

nursing, or engineering, where SDT has been studied more frequently. Previous application of SDT to the teaching profession has been limited, but its application is valuable in the current educational context. Recent education reform efforts uniquely impact those in the teaching profession, further warranting an investigation of SDT among teachers.

The researcher proposed that there would be a strong positive relationship among the three needs, with the correlations of competence with autonomy needs and relatedness with autonomy being higher than the correlation between competence and relatedness needs. The hypothesized relationship was supported in the present study, and the relationship among teachers' SDT needs was consistent with that of other professions. Just as in other professional fields, teachers' fulfillment of autonomy, relatedness and competence needs were positively related to one another, and autonomy fulfillment was the strongest predictor of the other two needs. When autonomy is supported in the workplace, need for competence and relatedness are more likely to be fulfilled.

Existing research on human motivation in work settings indicates that when people are intrinsically motivated to perform their jobs, a number of positive outcomes are facilitated. These include better psychological well-being, higher job satisfaction, organizational commitment and citizenship, performance, and related to lower emotional exhaustion and turnover intentions earning, and performance (Blais et al., 1993; Deci, Schwartz, Sheinman, & Ryan, 1981; Gagné & Deci, 2005; Grolnick & Ryan, 1987; Lévesque, Blais, & Hess, 2004; Richer et al., 2002). According to Self-Determination Theory (SDT; Deci & Ryan, 2000), certain elements of one's environment impact the fulfillment of three psychological needs: relatedness, competence, and autonomy. Fulfillment of these needs

constitutes a sense of intrinsic motivation, and thereby, positive psychological and performance outcomes. In a variety of work settings, autonomy has been found to be the strongest predictor of competence, relatedness, and life outcomes. SDT maintains that a highly controlling environment can thwart autonomy fulfillment, and thereby harm previously mentioned life outcomes.

Overall, teachers' reported sense of autonomy was not significantly different from a neutral score of "somewhat disagree / somewhat agree," while relatedness and competence were significantly higher. This suggests that teachers' need for relatedness and competence may be satisfied, but their need for autonomy may not be. The hypothesis that teachers' autonomy fulfillment would be the strongest predictor of relatedness, competence, and overall motivation was supported in this study. Among teachers in this sample, sense of autonomy predicted their sense of competence and relatedness, just as it has in previous studies with different populations.

The third important finding was that as overall perceived impact increased, the participants' satisfaction of autonomy, relatedness, and competence needs would decrease, and autonomy had the strongest inverse relationship with impact. This study confirmed that hypothesis and revealed that there is an inverse relationship between perceived impact of high-stakes education reform and SDT factors. It was found that low fulfillment of the three SDT needs is predictive of perceived detrimental impact of high stakes education reform. In addition, autonomy fulfillment was found to have the greatest predictive power. In this sample, when perceived impact increased, autonomy decreased. Therefore, teachers who are feeling more of a detrimental impact might be experiencing associated

undesired outcomes of lower well-being, job satisfaction, organizational commitment, performance, emotional exhaustion and turnover intentions.

The third finding indicates that satisfaction of the need for autonomy is the need most strongly related to teachers' perception of a detrimental impact of high-stakes education reform efforts on their work tasks. Autonomy was also the need most strongly related to overall motivation. Since autonomy was found to be the strongest predictor, it was acceptable for use as the dependent variable to examine perceived impact on each of the four tasks. The predictive ability of this variable has been previously found in the research.

The fourth important finding was support of the hypothesis that as perceived impact on each of the four work tasks increased, autonomy satisfaction would decrease. Based on review of the literature on intrinsic motivation for work, it was expected that the recent education reform efforts had removed some of the individual choice and decision-making power of teachers in their daily tasks. It was therefore expected that the impact they felt on their tasks would be directly related to the control teachers felt they had in their work.

This hypothesis was supported, and it was found that autonomy was related to class preparation, teaching, and student evaluation tasks in an inverse fashion, with moderate strength. A weak inverse relationship was found between autonomy and administrative tasks. Satisfaction of the need for autonomy was identified as the strongest predictor variable out of the three SDT needs. Therefore, it had value in predicting perceived impact on each of the tasks for teaching. As teachers in this study perceived greater detrimental impact of high-stakes education reform on their involvement in preparing for class,

presenting material, and assessing students, they were less likely to report having a fulfilled need for autonomy. Teachers have received several years of specialized training in the best methods of preparing and delivering instruction to students. However, in the present study they indicated that they feel little to no ability to make autonomous decisions. It's clear that teachers are being limited in what they are capable of providing for students.

Limitations

Risk of observation and non-observation are inherent in the survey method, and are likely to have occurred in this study. While the sample size was large enough to find significant results where they existed (Observed power=1.00), some regions of New York State were under- or not at all represented. Teachers in Erie County (N=7) were underrepresented, due to factors beyond the control of the experimenter. While some surveys were disseminated in this county, it appeared that the survey was not distributed between teachers as it had been in other counties. Teachers in this county had previously received media attention for vocalizing varied opinions about education reform efforts. Obtaining a quantitative measure of these teachers' perceptions and feeling on intrinsic motivation would have been valuable. Also, the potentially varied opinions that may have been present in this county would have contributed diverse information to the present study, had the survey reached this group of teachers.

The way the survey questions were worded may have minimized the strength of participant responses. The survey items asked about perceived impact, which may have been too vague to illicit strong responses. If the items had asked participants to report how fearful of or aggravated by high stakes education reforms, perhaps they would have

responded further toward the extremes than the null. There may also have been self-report bias in participants' responses. The questions in the survey asked participants to reflect on personal feelings toward their profession. This could have been an emotional and private task for some. Despite the anonymity allowed with this method, it may not have been enough to protect from the tendency of respondents to report in a way that would promote social desirability.

It was beyond the scope of this paper to undergo an item-by-item variable analysis. Future studies should further examine relationships that exist between items on the questionnaires used. Confirmatory factor analysis could be conducted to test the factor structure of the items used to assess autonomy, relatedness, competence, and overall motivation. In addition, this analysis could be conducted with the items used to assess impact of education reform efforts on class preparation, administrative, teaching, and student evaluation tasks.

The methods used in this study prevent the researcher from making any causal conclusions. Despite the interesting correlational findings linking the impact of high-stakes education reform to intrinsic motivation, it would be impossible to say that reform efforts had caused the observed motivation scores. In the same vein, it was also impossible to determine the direction of the relationship between reported motivation and perceived impact of reform efforts. As is true of most social science research investigating dispositional factors and life outcomes, correlational studies cannot say which variable is causing the other.

Implications

It is important to discuss the implications of low intrinsic motivation among teachers on students and the educational environment. Previous studies have revealed an indirect relationship between teacher motivation and student outcomes. Some have found that students' motivation can depend on the motivation of their teacher (Atkinson, 2000; Demir, 2010; Roth et al., 2007). This has been theorized as a reciprocal relationship. The style of instructing and interacting with students has been related to students' psychological needs, and intrinsic motivation for learning and achievement (Deci et al., 1981; Vansteenkiste et al., 2004). The group of teachers involved in the present study reported somewhat ambivalent overall motivation scores. Based on previous research, it can be expected that this ambivalence is having negative indirect effects on students' motivation for learning. It is disheartening to find that teachers do not feel they have the freedom to use their skills and knowledge of student learning to drive their practices. Furthermore, feeling that they do not have the ability to choose what they spend their work time and preparation time.

Fostering SDT needs among teachers has also been related to more beneficial outcomes in policy change, professional development (Grove, 2008), and in promoting confidence and career longevity among student teachers (Evelin et al., 2008; Roness, & Smith, 2010; Vermeulen et al., 2012). In previous studies, fostering SDT needs has been accomplished by providing encouragement rather than mandates for desired outcomes.

The SDT need of autonomy has previously been indicated as the strongest predictor of overall intrinsic motivation (Richer & Vallerand, 1995). In Richer and Vallerand's (1995) study, autonomy support took the form of a supervisor who presented the goals of a task

and emphasized their importance, then asked the supervisee how he she would like to proceed in order to accomplish the goals, allowing supervisee choice.

In the present study, fulfillment of need for autonomy was the strongest predictor of overall motivation, and it received the lowest reported fulfillment out of the three needs. The SDT needs of autonomy, relatedness, and competence have previously been shown to impact job performance and psychological well-being, and they have the potential to impact student learning.

It is logical to infer that teachers in an autonomy-supportive educational context would experience the most beneficial outcomes in psychological well-being, career longevity, job satisfaction and performance, and indirectly in student performance. It is the goal of this research that its results may promote an understanding among educational professionals and those in a position of decision-making. Characteristics of recent efforts to reform education have placed more scrutiny on teachers' daily practice, and tied higher consequences to the performance of their students.

The results of this study that indicated differences in perception of reform efforts could provide the opportunity to promote positive change in the field. Teachers with between 15-25 years experience teaching reported the most detrimental impact of education reforms. This was significantly higher than teachers with less than 5 and more than 25 years of experience. This suggests that protective factors exist among early- and late-career teachers. Future research should identify the specific protective factors. This information could then be used to create mentoring programs that allow the transfer of protective factors to other teachers. For example, problem-solving teams could be created

that bring early-, middle-, and late-career teachers together to share strategies for dealing with the stress of high-stakes education reform.

The finding that teachers of grades 4-5 reported the lowest fulfillment of need for relatedness and overall SDT needs fulfillment also has important implications. This finding suggests that out of all the teachers in a school, teachers of grades 4-5 feel the least connected to their colleagues. Future research should investigate the differences in the nature of teaching between grades 4 – 5, and 6 – 8. Perhaps differences should be investigated between individual grade-levels, to pinpoint the group of teachers feeling the least motivated.

At the conclusion of this study, new reform efforts in New York State were beginning to be implemented. These reforms were aimed at creating new mandatory teacher evaluation systems, which would place greater reliance on student test scores and teaching observations. Under this new system, a teacher cannot earn an overall rating of 'Effective' if he or she does not have an 'Effective' rating on the student test score portion. Teachers' unions in the state had not taken kindly to this new reform, describing it as relying too heavily on test scores, and weakening the control of local principals and administrators (Blain, 2015).

Before these reforms have begun, teachers are collectively expressing the feeling that they are being submitted to overly controlling conditions created by state-led efforts. In the coming years, it will be important to re-examine the impact these and future reforms will have on teachers. Documentation of detrimental impacts of these reforms should include quantitative evidence and have a sensible theoretical base. This will be important to create positive change in education reform in the future.

Contributions

The present study echoed the sentiment that had been expressed by teachers in New York State, and has contributed several important findings previously discussed. In addition to these findings, this study has three important additional contributions to the field of education and psychology. The first is that teachers reported feeling some detrimental impact of education reform on their job-related tasks. Specifically, the impact is felt in their role in administrative and student evaluation tasks.

Administrative task included recording and transmitting student data, and participating in meetings with parents and administrators. Student evaluation tasks included creating and grading student assessment materials. These tasks are secondary to teachers' role in delivering instruction and correcting student classroom behavior, they do not involve face-to-face time with students, and largely involve completing paperwork. These types of activities take up a substantial amount of time and energy, and do not include preparing effective lessons or obtaining professional development. A teacher is not improving his or her capabilities or skills as a teacher by creating and grading student assessments. It is clear that this group of participants have perceived recent high-stakes education reform efforts in these areas to be harmful. It appears counterintuitive to implement reform, which aims to improve the quality of teachers, but requires teachers to spend an impinging number of hours completing paperwork; tasks that are secondary to their preparing for and presenting instruction.

The second major contribution is that the theoretical framework of Self-Determination Theory (SDT) maintains its integrity when applied to the profession of teaching. In the current educational context, teachers in this study reported their need for

autonomy as the least fulfilled out of the three needs: competence, relatedness, and autonomy. The theoretical model of SDT that was upheld in the current applied study was that autonomy, relatedness, and competence are correlated with one another, and autonomy has the strongest relationship with competence and relatedness. Satisfaction of the need for autonomy is also the strongest predictor of overall motivation. This finding is important because it points to autonomy as the most valuable need. As the most direct link to overall intrinsic motivation, fulfilling teachers' need for autonomy should be of primary concern for employers and those leading reform efforts.

The third contribution is that, among the current sample of teachers, perceived fulfillment of the needs of autonomy, competence, and relatedness predicted perceived impact of high-stakes education reform. However, autonomy support is the strongest predictor. When teachers feel autonomy support, they are less likely to perceive negative impact of education reform. This feeling of choice to make decisions in their jobs based on what they know to be right, has the power to influence overall intrinsic motivation for work.

The present study has added to the years of existing research on what motivates teachers to persevere in their unique profession. This study has indicated that the most direct way to impact teachers' sense of intrinsic motivation is to provide an autonomous-supportive environment that allows teachers decision-making power in their daily activities. This could be accomplished by giving teachers the ability to contribute to decisions about the materials used for their classes, and the order and method in which they present them. Teacher evaluation systems that rely on student performance on

predetermined evaluation goals are one example of external control that has been placed on teachers recently.

It is the researcher's hope that the increased awareness gained from this paper will encourage consideration of autonomy support in future education reform efforts. Reform efforts that facilitate teachers' sense of autonomy would allow teachers to apply their knowledge of effective instruction to design and implementation of curriculum and evaluation. In order to feel autonomy-support, teachers must feel that they have some choice in their jobs; to do things that are in line with what they believe to be best, and not to follow others' commands.

This research makes clear that providing an autonomy-supportive context for teachers has the potential to unlock myriad beneficial outcomes. It has previously been associated with psychological well-being, career longevity, job satisfaction and performance, and indirectly in student performance. This research should be used to change the current context of education in New York State from one that feels punitive and controlling to one that feels supportive and invigorated to facilitate such documented positive outcomes.

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Table 1

Descriptive Statistics of Participant Demographic Variables

<i>Variable</i>	<i>N</i>	<i>%</i>
Gender		
Male	40	20.5
Female	155	79.5
Total	195	100
County		
Cortland	21	10.8
Jefferson	27	13.8
Lewis	6	3.1
Ontario	24	12.3
Seneca	31	15.9
Niagara	46	23.6
Wayne	22	11.3
Erie	9	4.6
Total	186	95.4
Missing	9	4.6
Number of Years Teaching		
< 5	20	10.3
5 - 15	73	37.4
15 - 25	64	32.8
> 25	37	19.0
Total	194	99.5
Missing	1	.5
Grade Teaching		
Preschool	2	1.0
K - 3	45	23.1
4 - 5	36	18.5
6 - 8	48	24.6
9 - 12	61	31.3
Total	192	98.5
Missing	3	1.5

Table 2

Significant ANOVA Results For Years of Teaching Experience

<i>Variable</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i> (3,190)	<i>Sig</i>
Competence and Years Teaching				3.308	.021
< 5	20	2.917*	.639		
5-15	73	3.098*	.697		
15-25	64	3.205	.618		
> 25	37	3.423*	.567		
Total	194	3.177	.653		
Teaching Impact and Years Teaching				3.135	.027
< 5	20	1.683*	.671		
5-15	73	1.986	.858		
15-25	64	2.245*	.832		
> 25	37	1.793*	1.120		
Total	194	2.03	.904		

*Least Significant Differences are significant at the $p < .05$ level

Table 3

Significant ANOVA Results For Grade Teaching

<i>Variable</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i> (4,187)	<i>Sig</i>
Mean Relatedness and Grade Teaching				3.065	.018
Preschool	2	1.833	.471		
K-3	45	2.916*	.819		
4-5	36	2.412*	1.096		
6-8	48	2.927*	.722		
9-12	61	2.637	.857		
Total	192				
Mean SDT Needs and Grade Teaching				2.594	.038
Preschool	2	2.350	.841		
K-3	45	2.640	.577		
4-5	36	2.413*	.597		
6-8	48	2.817*	.501		
9-12	61	2.653	.633		
Total	192				

*Least Significant Differences are significant at the $p < .05$ level

Table 4

Significant One-Way ANOVA Results For Gender

<i>Variable</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i> (1,193)	<i>Sig</i>
Relatedness and Gender				4.768	.030
Male	40	2.467	1.014		
Female	155	2.806*	.837		
Total	195	2.736	.884		

*Least Significant Differences are significant at the $p < .05$ level

Table 5

Intercorrelation Matrix of SDT and Impact Variables

	Motiva- tion	Compet- ence	Related- ness	Auton- omy	Impact	Class Prep	Teach- ing	Student Evalua- tion
Competence	.686**							
Relatedness	.784**	.270**						
Autonomy	.808**	.418**	.424**					
Impact	-.383**	-.226**	-.181*	-.473**				
Class Preparation	-.358**	-.213**	-.149*	-.464**	.876**			
Teaching	-.354**	-.227	-.185**	-.403**	.855**	.733**		
Student Evaluation	-.328	-.239	-.120	-.405**	.876**	.693**	.660**	
Administra- tive	-.273	-.098	-.179*	-.333**	.788**	.549**	.543**	.583**

* $p < .05$ ** $p < .01$

Table 6

Descriptive Statistics For Impact and Motivation Variables

<i>Variable</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Overall Impact	195	2.152	.861
Class Preparation Impact	195	2.050	1.031
Student Evaluation Impact	194	2.392	1.113
Teaching Impact	195	2.0	.903
Administrative Impact	195	2.159	1.005
Overall SDT Needs	195	2.65	.593
Relatedness	195	2.736	.884
Autonomy	195	2.040	.789
Competence	195	3.176	.652

Table 7

Goodness of Fit Indicators of Hypothesized Latent Variables (N=195)

	X^2	df	CFI	RMSEA	SRMR	R ²	p
Overall Impact	4.045	2	0.995	0.072	0.015	0.442	0.132
Overall Motivation	0.000*	0	1.000	0.000	0.000	0.656	<.0001

Note: X^2 -chi square goodness of fit statistic ($p=0.132$); df -degrees of freedom; CFI-Comparative Fit index; RMSEA-Root Mean Square Error of Approximation; SRMR-Standardized Square Root Mean Residual

Table 8

Standardized Factor Loadings for Overall Variable Models (N= 195)

	Overall Impact
	β
Class Preparation	0.861*
Teaching	0.834*
Student Evaluation	0.813*
Administrative	0.665*
	Overall Motivation
	β
Relatedness	0.523*
Competence	0.516*
Autonomy	0.810*

* $p < .0005$

Table 9

Goodness of Fit Indicators of SDT Needs on Impact (N=195)

	χ^2	p	df	CFI	RMSEA	SRMR	R ²
Autonomy	5.108	0.403	5	1.000	0.011	0.015	0.26
Relatedness	7.165	0.209	5	0.995	0.047	0.022	0.035
Competence	6.622	0.250	5	0.996	0.041	0.021	0.064

Table 10

Standardized Loadings for SDT Needs on Impact (N=195)

	Mean Autonomy β	Mean Relatedness β	Mean Competence β
Overall Impact	-0.510*	-0.188*	-0.253*

* $p < .0005$



Figure 1. Map of NYS counties showing number of participants from each county.

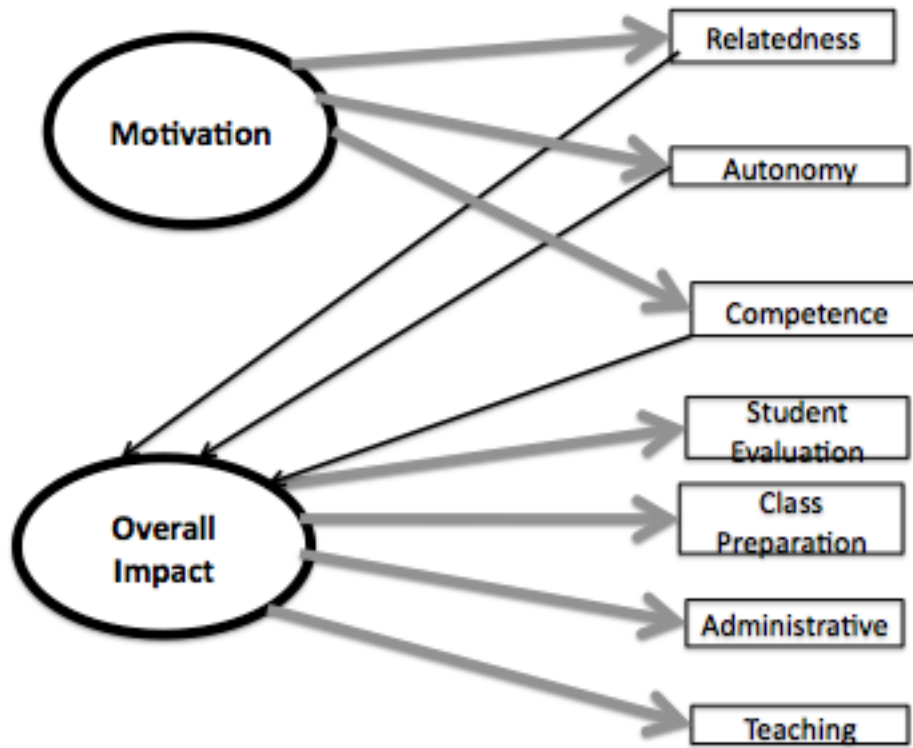


Figure 2. Hypothesized model.

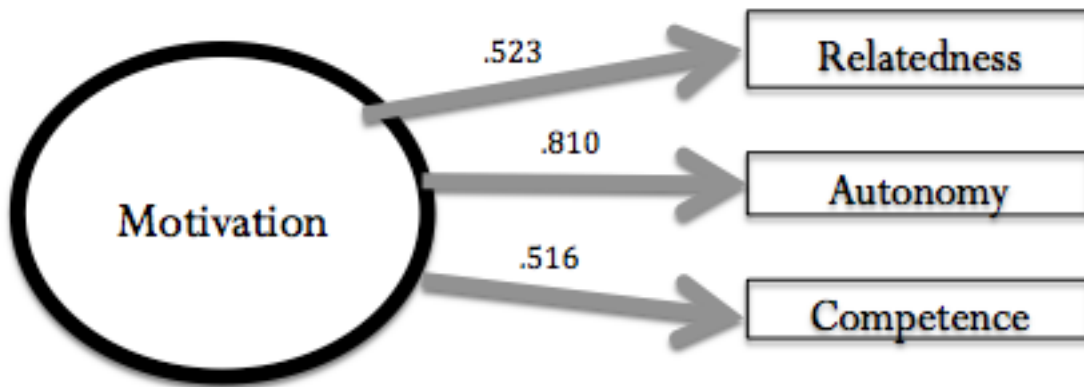


Figure 3. Resulting model of motivation as a latent variable.

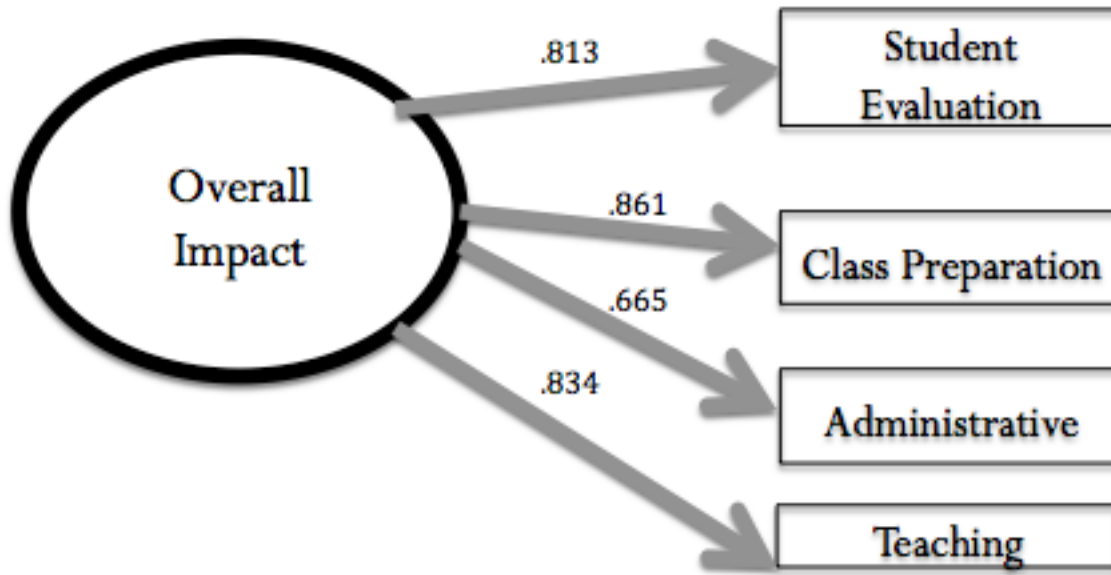


Figure 4. Resulting model of impact as a latent variable.

Appendix A

Task Impact ((items adapted from the WTMST (Fernet et al., 2008)

The following statements aim to tap your personal experiences at work. Please indicate the degree of impact you have felt from high-stakes education reform on the following work tasks.

0	1	2	3	4
significant and beneficial impact	some beneficial impact	no noticeable impact	some detrimental impact	significant and detrimental impact

To what extent do you believe recent education reform efforts have impacted your role in the following class preparation tasks?

1. Deciding on instruction topics and material.
2. Determining the presentation forms and sequences.
3. Establishing the work procedure.

To what extent do you believe recent education reform efforts have impacted your role in the following teaching tasks?

4. Presenting instruction.
5. Answering student questions.
6. Listening to student needs.

To what extent do you believe recent education reform efforts have impacted your role in evaluation of students?

7. Constructing assessments and exams.
8. Correcting or grading assessments and exams.

To what extent do you believe recent high-stakes education reform efforts have impacted your role in administrative tasks?

9. Recording and transmitting student data.
10. Participating in meetings with teachers, parents, or administrators.

Appendix B

Work Related Basic Needs Scale (W-BNS; Van de Broeck et al., 2010)

Please rate the extent to which you agree with the following items regarding your current work experience.

0	1	2	3	4
Totally disagree	Disagree	Somewhat disagree / somewhat agree	Agree	Totally agree
Totally agree*	Agree*	Somewhat disagree / somewhat agree	Disagree*	Totally disagree*

Relatedness Satisfaction

1. I don't really feel connected with other people at my job.*
2. At work, I feel part of a group.
3. I don't really mix with other people at my job.*
4. At work, I can talk with people about things that really matter to me.
5. I often feel alone when I am with my colleagues.*
6. Some people I work with are close friends of mine.

Competence Satisfaction

1. I don't really feel competent in my job.*
2. I really master my tasks at my job.
3. I feel competent at my job.
4. I doubt whether I am able to execute my job properly.*
5. I am good at the things I do in my job.
6. I have the feeling that I can even accomplish the most difficult tasks at work.

Autonomy Satisfaction

1. I feel like I can be myself at my job
2. At work, I often feel like I have to follow other people's commands.*
3. If I could choose, I would do things at work differently.*
4. The tasks I have to do at work are in line with what I really want to do.
5. I feel free to do my job the way I think it could best be done.
6. In my job, I feel forced to do things I do not want to do.*

* Items are reverse coded for scoring purposes.

Appendix C

Demographics

1. Please select your gender:

- 1 Male
- 2 Female

2. How many years have you been teaching?

- 1 Less than 5
- 2 Between 5 – 15
- 3 Between 15 – 25
- 4 More than 25

3. What grade level do you currently teach?

- 1 Preschool
- 2 K – 3
- 3 4 – 5
- 4 6 – 8
- 5 9 – 12

4. What is the name of the county your school district is located in?

Appendix D

Informed Consent

The following survey will ask about your current experiences in your role as a teacher. It aims to determine the extent to which you feel current education reform policies have impacted various elements of your teaching role. It will also ask about your current perception of various elements of your job.

Your responses will be used to investigate whether a relationship exists between the current educational context and motivation for teaching. This will potentially help improve the methods of educational reform in the future. The survey will take no more than 10 minutes to complete.

You will not be asked for your name, or any other identifying information. The county in which your school district is located will be required for data analysis only. School names will be coded, and kept confidential. They will not be released or be used to identify any participants. Data will be stored on a password-protected computer.

If you would like to be entered in a raffle for one of 35 \$10 Visa gift cards, you will be directed from the survey to a separate page to submit an email address. This email address will not be associated with the your responses.

Your participation in this study, while valuable, is voluntary, and refusal to participate will involve no penalty or loss of benefits. You may choose to discontinue participation at any time without penalty.

If you have questions concerning the survey or the research, please contact:

Jennifer Grabski (JLG13@alfred.edu), or
Dr. Mark Fugate (ffugate@alfred.edu).

If you have questions about your rights as a survey participant, please contact the chairperson of the Human Subjects Research Committee at Alfred University, Dr. Danielle D. Gagne, hsrc@alfred.edu, 6078712213.

By initiating this online survey, you indicate that you are at least 18 years old, have read the informed consent above, and have decided to participate.