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The Influence of Teacher Motivation in the Context of Performance-Based Compensation

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Abstract

The purpose of this study was to examine teacher motivation in the context of performance-based compensation systems. The researcher specifically sought to address four research questions:

1. To what extent are teachers motivated for behavioristic/economic reasons and extrinsic rewards?
2. To what extent are teachers motivated for altruistic/PSM reasons and intrinsic rewards?
3. To what extent are teachers simultaneously motivated by both behavioristic/economic and altruistic/PSM means?
4. To what extent are behavioristic/economic or altruistic/PSM motivators more dominant in what drives teachers?

The data used in this study was gathered from teachers working in the Eagle County School District in Colorado in the Spring of 2011. 278 teachers participated in the survey which was part of a required evaluation program the district undertook to be in compliance with program evaluation requirements as a federal "Teacher Incentive Fund" grant recipient.

The researcher used descriptive statistical analysis techniques on the data to answer the research questions posed for this study. From this analysis, some clear

conclusions were drawn. First, the evidence presented in this dissertation suggests that teachers are motivated by behavioristic/economic motivators. However while it appears teachers desire to earn more money, this did not seem to translate into a clear behavioral change in terms of work habits. The evidence did suggest an increased level of attention to measures that were tied to compensation.

Second, teachers are also motivated for altruistic/public service motivation reasons. All of the educators who participated in the survey used in this dissertation were in some level of agreement with questions on if they are motivated to help others, particularly students.

Third, the evidence presented here suggests that teachers can be simultaneously motivated by both the behavioristic/economic and the altruistic/public service motivation paradigms.

Finally, the altruistic/public service motivation paradigm seems to be the stronger of the two in what drives teachers. However, the behavioristic/economic paradigm does suggest the ability to draw the attention of educators to those things to which financial incentives are attached.

Acknowledgements

It is only fitting that I begin by thanking my wife, Sarah Glass, for her unwavering support, patience, inspiration, and love through this process. She has saved my life in so many ways and this acknowledgement is, in small part, recognition for all she has given me.

I would also like to thank the faculty and staff at Seton Hall University for both making this process possible and for clearing the way for me to be successful. In particular, Dr. Anthony Colella, my dissertation mentor, Dr. Christopher Tienken, my dissertation advisor, and Dr. James Caulfield have been of tremendous service on my behalf. I would also like to thank my committee members, Dr. Andrej Birjulin and Dr. Eric Olsen for their support, input, and guidance through this process.

To the leadership and all the staff of Eagle County schools, I owe a tremendous debt of gratitude for their continued inspiration and support. These are people and schools who give me hope and embody what public education should be. In particular, many thanks to Dr. Sandra Smyser, who both inspired and supported my efforts to achieve this accomplishment.

Of significant importance are the tremendous educators who made up Seton Hall's Cohort XIII. Perhaps the most

valuable parts of this journey were the friendships and shared experiences I had with these amazing individuals. I will always be honored to be associated with you and call you friends.

Finally, I will conclude these acknowledgements with a word in recognition of my parents James and JoAnn Glass, who have always believed in me. Thanks to my father for teaching me determination and instilling unwavering integrity. Thanks to my mother for teaching me curiosity and instilling boundless love. My calling into public service was inspired by both of you and you are never far from my thoughts.

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Chapter I

INTRODUCTION

Calls for the implementation of performance pay plans are coming from several voices around the country, not the least of which include President Barack Obama and Secretary of Education Arne Duncan. While stumping the country as a presidential candidate, Obama (as cited in Dillon 2008) rankled some members of the National Education Association (NEA) by calling for experimentations with performance pay. Secretary Duncan (as cited in Henderson 2009) carried through on Obama's campaign rhetoric for the Obama administration by advocating for performance pay at the NEA national convention in San Diego in 2009, and through the Department of Education's continued support for the Teacher Incentive Fund (TIF) grants (U.S. Department of Education, 2010). More recently through the Race to the Top (RTTT) program, the federal government generated considerable interest and experimentation with performance pay by leveraging unprecedented amounts of federal education money for states and districts to enact a series of human capital reforms that included performance-based compensation.

Although the Obama administration's ongoing show of support for the idea of performance pay, and their willingness to publicly speak about it to relatively

unsupportive groups like the NEA, demonstrates the administration is serious about pushing performance pay as an education reform, this is an issue which clearly has support on both sides of the political aisle. Beginning in 2006, with support from Congress and President George W. Bush, the U.S. Department of Education has now funded nearly $200 million to support experiments with performance pay through the aforementioned Teacher Incentive Fund. In 2008, the Republican platform specifically included support for "merit pay for good teachers" and that "school districts must have the authority to … reward the best and brightest teachers … without regard to collective bargaining agreements" (Republican National Committee 2008, p. 43).

This increased interest in performance pay has not gone unchecked and unnoticed. Many teachers and union leaders denounce performance pay plans for a number of reasons, including fears that they will undermine collaboration among teachers or that these plans will unfairly penalize teachers based on mysterious or flawed standardized assessments and biased evaluation processes (Winans, 2009). At the heart of this opposition is the fear that teachers will unfairly be held accountable and that these pay systems create unhealthy competition among

educators, ostensibly destroying collaboration (Ritter & Van Roekel, 2008). Other critics of performance pay fear that this new form of merit pay is just a way for school boards or administrators to get back at teachers (Gratz, 2009a).

However, there are signs from the national unions that their wholesale opposition to the concept appears to be softening. For example, Randi Weingarten, President of the 1.5 million member American Teachers Federation (the second largest teachers' union in the United States behind the NEA), has been outspoken about her willingness to work with administrations in the exploration of performance pay and other education reforms and she has touted her collaborative work with Mayor Michael Bloomberg in crafting a performance pay plan for New York City Schools, the largest public school district in the United States. According to Weingarten (as cited in Honowar 2008), when speaking to the issue of performance pay, "no issue should be off the table, provided it is good for children and fair to teachers." Even the generally slower moving NEA is beginning to show some initial signs of acceptance of the idea of performance pay, provided some reasonable design principles are followed (American Association of School

Administrators, National Education Association, National Association of School Boards, 2011).

Local union leaders in places like Denver public schools and Eagle county schools in Colorado have shown this collaborative spirit in working with their administrations and boards to develop fully functioning performance pay systems in which the traditional step and lane system has been completely replaced. The question has moved from if schools should adopt some kind of performance pay system is beginning to now move to how and there are a number of districts across the country solving the technical problems with the change that once were seen as barriers to implementing these new compensation models.

What Motivates Teachers

A central question that arises as districts consider the implementation of a performance-based compensation system is: what motivates teachers? One possibility is that performance pay mostly rests on the premise that teachers can be motivated by extrinsic rewards, such as attaching cash to test scores or evaluation scores. Much like the car dealer or the insurance salesperson working on commission for vehicles or policies sold, the logic of this behavioristic/economic paradigm is that teachers should be rewarded for getting students to achieve or for

demonstrating great teaching (and also punished financially by reducing their compensation in comparison with their peers). This thinking comes from a Skinner-esque paradigm where employees focus on improving those things to which incentives are attached (Skinner, 1938) and an economic paradigm that rational people respond to financial (or remunerative) incentives.

Opposing these behavioristic/economic views is the idea that teachers are actually motivated by altruistic or intrinsic rewards. This paradigm tells us that teachers are motivated to help their students achieve and improve because it provides meaning and importance to their lives. This altruistic, or public service motivation (PSM) paradigm holds that the idea of offering some amount of money to teachers to get them to work harder and provide better instruction is insulting to teachers, who would already do anything they could to help students succeed because it provides them intrinsic gratification (Gratz, 2009b; Perry, Mesch & Paarlburg, 2006b).

Frederick Herzberg (1959) presented his two-factor theory as a model for how these two opposing views might coexist. Herzberg theorized that there were two sets of factors that affected satisfaction and job performance. Herzberg's factors were a set of motivators and a set of

hygiene factors. Herzberg argued that both sets of factors were important, but the attention to the hygiene factors was important to prevent job *dissatisfaction* and attention to the motivators was important to increase job *performance*.

Problem Statement

In recent years there has been a dramatic increase in interest, and in the implementation of, performance-based compensation systems. However, in the design of these systems, little account or consideration is given to the underlying psychological mechanisms that may be at work that would make or break the ability of these compensation systems to actually alter behavioral patterns, improve teaching, and ultimately improve student learning. More simply, little thought is given to how performance pay systems would actually work in improving teaching and learning. The question of what motivates teachers is almost always left out of the debate in the rationale to implement these systems.

Further, little research has been conducted looking specifically at teacher motivation in a performance-based compensation context. More directly, while research does exist looking at motivators and the effect of compensation on motivation, little of this research focuses on the

particular and important case of teachers in the context of performance based compensation.

This study investigates what motivates teachers in the context of a performance-based compensation system and can provide insight into the problem of a generally poor understanding of the psychological mechanisms at work in the design of various compensation systems. Further, this study can provide practical insight to policy makers and practitioners in the development and implementation of performance-based compensation systems.

Purpose of the Study

The purpose of this study is to explore the influence of behavioristic versus altruistic paradigms in what motivates teachers. This study investigates if one or both of these paradigms of motivation holds true for teachers. Further, this study investigates which paradigm is more dominant, if these two paradigms are not mutually exclusive of each other, and if the behavioristic view can actually operate along with the altruistic view. Finally, the study investigates if a performance pay system can serve to focus the attention of educators on measures attached to financial incentives.

Research Questions

The specific research questions this study will address are as follows:

1. To what extent are teachers motivated for behavioristic/economic reasons and extrinsic rewards?
2. To what extent are teachers motivated for altruistic/PSM reasons and intrinsic rewards?
3. To what extent are teachers simultaneously motivated by both behavioristic/economic and altruistic/PSM means?
4. To what extent are behavioristic/economic or altruistic/PSM motivators more dominant in what drives teachers?

Source of Data: Eagle County Schools

I use data from Eagle county schools (ECS), where a performance-based pay system is used. ECS is a public school district of approximately 6,000 students located in the Central Colorado Rocky Mountains. ECS is made up of 19 schools, including nine traditional PreK-5 elementary schools, four traditional 6-8 middle schools, two traditional 9-12 high schools, one alternative 9-12 high school, one 6-12 ski and snowboard academy, and two district charter schools. ECS serves the ski resort

communities of Vail and Beaver Creek as well as rural communities in a county covering approximately 1,700 square miles. All employees working for ECS are part of a performance pay system, with the exception of temporary workers and employees working in one of the district's two charter schools (one school is part of a separate performance pay system, one is not). Because of the district's near decade long history in using one of the most aggressive implementations of performance pay in the country with its staff, data gathered from the district presents a rare opportunity to measure the motivations of public educators who are exposed to significant financial rewards for performance-based outcomes.

The ECS History with Performance Pay

Eagle County Schools adopted performance pay as part of a sweeping human capital and instructional reform in 2001 with widespread implementation occurring in 2002. This change came with the election of an innovative and reform oriented board of education with a predominately business-minded management approach. This board led the district to adopt performance pay as a reaction (in part) to competition the district faced from a number of private and charter school options for students, as well as relatively stagnant assessment results.

The 2001 reform was comprehensive in scope. It contained not only a performance pay component, but also the adoption of the Milken Family Foundation's Teacher Advancement Program (TAP) model which has four key components. The first component of the TAP model is *Multiple Career Paths* in which teachers are asked to choose a role: Career Teacher, Mentor Teacher, or Master Teacher. Mentor and Master Teacher roles come with a decrease in direct instruction responsibilities, an increase in coaching and leadership responsibilities, a peer-evaluation role, and a monetary stipend for the additional time and responsibilities accompanying these positions. The second component is *Ongoing, Applied Professional Growth* where teachers have structures and supports for professional learning built into their teaching day including coaching, the application of innovative instructional methods, and peer interaction centered on students. The third component is *Instructionally Focused Accountability* which refers to a comprehensive and intensive system of teacher evaluation and student assessments to determine teacher effectiveness and student achievement. The final component is *Performance-Based Compensation*.

ECS adopted the first three components as prescribed by the Milken Family Foundation and made significant

efforts to follow them with integrity as prescribed by that organization. However, the performance pay component was a completely locally developed and novel approach.

The entire program, including the performance pay system, was commonly referred to throughout the district as *TAP*. It is important to note that while the Milken Family Foundation did provide consulting services and supports in this initial phase, the existing ECS administration and board at that time was responsible for the implementation of this significant reform. Schools were brought into the system in waves beginning in 2002, but all schools (with the exception of the district charter school) and all employees (including both teachers and principals but also district office staff and all support/classified employees) were required to participate by 2006.

With the adoption of this performance pay system, ECS was the first district in the country to completely abandon the step and lane salary schedule since its widespread adoption beginning in the 1920's.

ECS has evolved through two major iterations of performance pay. The aforementioned TAP system was in place from 2002-2007 and a second system (intentionally without a name) from 2008-present. In the first implementation (TAP), ECS used a system of student

achievement and evaluation scores to arrive at a bonus and salary increase. A goal of this first phase system was to attach compensation as closely as possible to the achievement results of the students with whom each individual teacher worked. In effect, this was an attempt to measure the academic impact for each individual teacher and attach pay to this measure as closely as possible.

The technical complexities of ECS's TAP system resulted in incredibly complicated and different systems for all its various groups of employees. Some teachers could be reasonably linked to their students (relying on the district's student information system class rosters), but many could not. For example, the third grade teacher who teaches math, reading, and writing was directly linked to student results for those subjects. However, even this simple linkage raises technical concerns. As teachers, especially at elementary grades, work in dynamic and various forms of co-teaching models, it is very difficult to specify which teachers really teach which kids. While technical solutions to this issue have been developed, the ECS method of relying purely on the district's student information system frequently led to a misalignment of teachers to student results.

Furthermore, there were a number of teachers for whom no valid and reliable assessments were available to quantify student achievement results for an individual payout calculation. For example, the art teacher, the special education teacher, and the language acquisition teacher, and the early childhood teacher all had to default to a building level calculation using core curriculum (reading, writing, math) assessments.

The district payout calculations were further complicated by the school calendar. Because the district uses trimesters that limit the amount of direct instruction any single teacher might have with a particular student at the secondary level, achievement results could not be directly linked to any high school staff as the time each teacher had with students could be as little as one sixth of an instructional day for one third of the school year.

Even further complicating the system, all district administrators and support staff were also involved in this performance pay plan requiring a number of simultaneously operating systems to deal with the differences between building and district employees, salaried and hourly employees, and quasi-instructional positions - like counselors and special education service providers - and direct core content instructional staff.

This first implementation of the TAP system was also characterized by a top down implementation strategy. One high level district administrator tasked with implementing performance pay during this first implementation told outside evaluators in 2007 that his job was to "cram performance pay down peoples' throats." This approach resulted in "backlash, animosity, and an erosion of trust" in the district from many employees (Performance Based Compensation Steering Committee Final Report, 2008). Also, the district was characterized negatively in the press by employees and the community on a regular basis. Further, the district experienced one of the worst teacher attrition rates in the state of Colorado during this time period, averaging teacher turnover in excess of 19% annually and an estimated annual cost of $122,700 to the district from 2001-2004 (Paone et al., 2008).

A number of internal tensions led to a series of resignations and forced removals from the district's central leadership staff. This resulted in a near clean decapitation of district leadership in the summer of 2007 and a replacement with new leaders (including a new Superintendent, CFO, Curriculum Director, HR Director, Communications Director, and ESL Director), the district began a comprehensive evaluation of the performance pay

system. This involved the creation of a large and representative group called the Performance Based Compensation Steering Committee, which purposefully included a number of critics of the existing performance pay system and significant teachers' union representation. Using a consensus-based decision model, this group sought input from several levels of the organization, studied performance pay systems from around the country, made its work and its decisions transparent to all, and vetted its decisions with the administration, the Board of Education, the teachers' union, and several non-unionized employee groups (maintenance, transportation, food service, technology, etc).

The resulting recommendations from this group brought about the second iteration of performance pay in ECS which was implemented at the end of the 2007-08 school year. This second iteration of performance pay still differentiates compensation for all employees based on student assessment and employee evaluation, but standardizes the process for all employees. For student assessment, the revised system relies on an index of building and district level assessment results from a variety of tests and a number of test analysis methods. For employee evaluation, each employee is evaluated in a

continuous annual process by evaluators who are trained to improve reliability. The new system of performance pay developed in ECS in 2007 intentionally does not have a name. On the advice of the performance based compensation steering committee and the direction of the district administration, this new model was to be considered how the district does business when it comes to compensation and that this was an integral part of ECS and not an add-on program.

With this change to a new performance pay system, significant effort was put forward (and continues to be put forward) in communicating the change, honestly addressing concerns, and emphasizing the creating a culture of learning and continuous evolution for the district.

Limitations and Delimitations

While there may be no better case for investigating the motivational factors that drive teachers than using this data from ECS, there are also a number of limitations in this study.

One of these limitations comes from the district sampled. This is a study of a smaller (approximately 6,000 students), rural district inclusive of two world class ski resorts. Just looking at purely demographic and geographic limitations, some caution should be observed when

generalizing the results to school districts and educators in other settings.

A second limitation exists because there is a significant possibility that exposure to a performance-based pay system for these 9 years fundamentally changed the educators working for ECS and that their motivations may in fact be different from those working in typical and traditional compensation systems. Also, in 2006, ECS received a Teacher Incentive Fund (TIF) grant for approximately 6 million dollars over 5 years from the U.S. Department of Education to support its efforts in experimenting with performance pay. While the purpose of the TIF grant is to encourage compensation innovation among school districts, it represents a large funding source that provided technical support and professional development opportunities for ECS that otherwise would not have existed. As a result ECS has been able to undertake several unusually ambitious and technical efforts and compensation practices that it might not have been able to do on its own revenues.

A third limitation arises from the reliance on only quantitative data and the statistical analysis techniques used in this study. While this method does provide this study with a relatively large number of responses and

convenient means to analyze the information, the reliance on purely quantitative means does limit the ability to more completely investigate the topic.

A final of limitation comes from the instrument used in the survey. The instrument was designed by a social psychologist and a psychometrician with the express purpose of answering questions written into the evaluation portion of the federal TIF grant the district received. While I did have some input into the design of this instrument, the primary role of instrument construction and administration was handled by someone besides myself.

This study also contains a number of delimitations. First, it uses data from a purposefully sampled school district that has used a performance pay system. The rationale to use the data from this particular district was based on the unique opportunity to capture data on teacher motivation from educators with extensive experience in a performance-based pay system (a relatively rare situation) and my access to this information.

Second, the study intentionally focused on the question of teacher motivation in a performance-based pay context and specifically did not address the common question whether such compensation schemes have an effect on student achievement.

Third, the study does not address the reasons why teachers might have behavioristic/economic motivations or altruistic/PSM motivations, but instead focuses on their relative presence, absence, or coexistence.

Definition of Terms

Altrusitism: Altruism is the idea that people are motivated to help others and improve themselves for intrinsic reasons.

Behaviorism: Behaviorism is the theoretical model of motivation built on B.F. Skinner's (1938) ideas of responses to stimuli.

Compensation: Monetary remuneration for services provided. While compensation may actually take on many forms, in this study the context is restricted to the fiscal elements.

Economic: This term refers to a financially driven system built on supply and demand that assumes rational people respond to financial incentives.

Microeconomic: This term refers to a subset of economic thinking focused on individual-level decisions as opposed to nations or other large scale actors.

Performance-Based Compensation: Compensation systems built on a person or group's ability to perform some task or job well.

Public Service Motivation Theory: The theory that those working in the private sector are primarily driven or motivated to advance the public good and also are motivated by being part of collective efforts rather than individual efforts.

Step and Lane: This term refers to the traditional compensation system for educators where pay is determined by years of experience and number of education credits that teachers hold.

Teacher Advancement Program (TAP): Professional development and career ladder model ECS used in designing the district's human capital reform in 2001.

Summary

ECS is one of the few districts in the nation to have actually adopted a performance-based model of compensation and it can certainly be argued that the ECS system is among the most transformational changes in existence in educator compensation models. Also, the ECS system has undergone two iterations of performance pay and has been in existence over 9 years. However at its core, ECS is still a public education school district that seeks to provide a quality, free education to any student that appears at its doors. It is because this public school district has implemented a performance-based pay system that it also makes a near

perfect test case to investigate and make inferences about the motivations of American public educators.

The ECS experience presents the rare opportunity to study attitudinal attributes of public school educators who are working for an organization that has aggressively implemented a performance pay system. This is still a comparatively unusual find and will provide insights unavailable from any other existing data sources.

Fundamentally, this study seeks to explore what motivates teachers. From this study, we might gain a better understanding of how performance pay works from the individual, psychological level of the educator. This work has significant implications as more and more districts around the country move to performance-based pay systems and are engaged in the ongoing design and refinement of these systems.

Knowing how educators are motivated and what they work for is a critical component to consider as performance-based compensation systems are considered, designed, and implemented nationally.

Going forward, this study is organized into four chapters. Chapter II will review the extant literature relating to the topics of performance-based compensation and on human motivation. Chapter III will lay out the

research design for the study including the research questions and how the data will be analyzed. Chapter IV will present the results. Finally, the study will end with chapter V as a summary and statement of implications for policy, practice, and future research.

Chapter II

LITERATURE REVIEW

Introduction

For the literature review portion of this dissertation, I review the larger research on performance pay in some detail, and then move to a focused review of research on teacher motivation and how it is an important concept to consider in the implementation of performance-based approaches to educator compensation.

The central question I seek to answer is on teacher motivation. More specifically, are teachers motivated for altruistic reasons or for economic reasons? Or, can there be some overlap of these two motivations, wherein each is not mutually exclusive of the other. While teacher motivation is of primary concern, the question of motivation in this study is viewed through the lens of its importance in the performance-based compensation discussion. That is, can we motivate teachers with money?

This literature review broadly considers sources for inclusion. These come from articles in peer reviewed journals, scholarly articles in non-peer reviewed journals, published manuscripts, edited chapters in books, published books on performance pay, and publications from

foundations, associations, and education policy think-tanks. This literature review specifically excludes non-empirically or theoretically-based opinion pieces, popular literature sources, and other less scholarly sources on this subject.

Defining Performance Pay

To begin a discussion of performance pay, it is important to define what it is. Generally, compensation systems for teachers come in relatively few variations. The traditional method of paying teachers (employed by the vast majority of school districts in the United States) uses a step and lane, or lock-step, salary scale that differentiates teacher pay based on a combination of experience and higher education credits or advanced degrees. Like a Cartesian coordinate system, one can determine salary by simply finding the number that corresponds with years of experience on one axis and the teacher's education level on another. For teachers to advance in pay they need just to earn more educational credits or gain another year of teaching experience. Step and lane systems also frequently add additional pay to teachers through cost of living shifts applied across the whole grid in any particular school district.

These compensation systems rose to prevalence in the United States beginning in the 1920's as a reaction to pay systems based on race, gender, or nepotism. It is important to acknowledge that the step and lane pay system was an important compensation innovation as it effectively removed these discriminatory practices from educator pay. In the United States, the step and lane pay system has been in use for nearly a century now and represents the near universal and standard approach to teacher compensation (Protsik, 1995). Other than through a teacher's ability to be retained for another year (which is not particularly difficult in the field of public education outside of reductions due to budget shocks), this kind of compensation system typically does not contain differentiation elements based on any kind of performance.

Performance pay, on the other hand, is described by Scott J. Adams and John S. Heywood (2009) as "earnings … linked to some measure of performance" (p.15). Adams and Heywood go on to present a taxonomy of performance pay systems from a private sector perspective which modifies a previous taxonomy presented by Milkovich and Wigdor (1991). As Adams and Heywood present an approach grounded in the business world, I have further modified this approach to include concepts within Adams and Heywood's paradigm that

fit an educator compensation setting. Table 1 presents this thinking:

Table 1

Matrix of Performance Pay Types in an Educational Context

		Levels of Measurement Examples	
Relationship to Base Pay	Type of Performance Determination	Individual	Group
Adds	*Formulaic*	Increases based on standardized test scores linked to the individual teacher (e.g. value added).	Increases based on district, building, or team standardized test results. (e.g. attainment or growth measures).
	Judgmental	Increases based on individual evaluation scores or individual objectives/goals.	Increases based on teams or groups meeting shared objectives or goals. (e.g. creating a positive school culture).
Doesn't Add	*Formulaic*	Bonuses based on standardized test scores linked to the individual teacher (e.g. value added).9	Bonuses based on district, building, or team standardized test results. (e.g. attainment or growth measures).
	Judgmental	Bonuses based on individual evaluation scores or individual objectives/goals.	Bonuses based on teams or groups meeting shared objectives or goals. (e.g. creating a positive school culture).

Table 1 shows how this taxonomy can look in an educational context. *Relationship to Base Pay* indicates whether or not the payment is added to the employee's base pay (effectively creating an ongoing salary increase for the employee, as is the case with the Denver Public

Schools' ProComp system) or does not add and is a stand-alone bonus on top of regular base pay (as is the case with Houston Independent School District's Aspire program). *Type of Performance Determination* is broken down into two types: Formulaic and Judgmental. Formulaic determinations refer to those that can be calculated based on some mathematical formula. Formulaic payments tend to be more objective and rely on predefined targets and quantitative measures to determine performance. Judgmental determinations refer to payments where a human evaluation of some type is required to determine the performance. Judgmental payments tend to be more subjective and rely on human evaluation to determine performance.

While this taxonomy clarifies the types of performance pay that may exist in schools, there are a number of additional methods of differentiating pay not based on performance or the traditional step and level system. Table 2 presents a number of other *Differentiated Pay* systems that appear in some schools pay systems which may be used along with a step and lane based pay system or a performance-based pay system.

Table 2

Matrix of Differentiated Pay in an Educational Context

Type	Example
Market-Based Pay	• "High Needs" or "Hard to Fill" bonuses. • Different pay tracks for Special Education or STEM teachers.
Additional Duty Pay	• After School Tutoring • Extra-Curricular Pay • Extended Day • Extended Year
Differentiated Career Path Pay	• Mentor Teacher Role • Master Teacher Role • Group Leaders • Department Heads
Elite Teacher Pay	• National Board of Professional Teaching Standards Certification • State Master Teacher Certification • "Teacher of the Year" Awards

Table 2 shows several types and examples of differentiated pay. *Market-Based Pay* refers to payments school districts may make where the market requires that the district offer additional compensation for a particular position where supply and demand factors increase the relative price it takes to employ a qualified person in that role. Schools or districts that are high poverty or that have diverse demographics and positions that deal with highly demanding, technical, or competitive subject matters

are more difficult to staff. Market-based incentives can be used to incentivize individuals in taking on these roles. *Additional Duty Pay* refers to additional payments made to staff who take on extra roles outside the classroom. *Differentiated Career Path* payments are made to teachers who take on teacher leadership and/or coaching roles with their peers. *Elite Teacher Pay* refers to added pay for holding a rare and difficult to obtain credential, like National Board for Professional Teaching Standards certification, or through being designated an excellent teacher through some rigorous and performance discriminating internal or external review process.

With the exception of the step and lane pay system, all of these differentiated pay types certainly represent novel approaches to compensating teachers that are outside the typical box of educator pay. However, it is important to note that these are not typically performance-based approaches because they are not linked to measures of teacher (input) or student (output) performance (or any other measures of performance). Of course, an exception to this could be if these differentiated pay options were only made available to those teachers who had demonstrated some level of high performance, but this is unusual in actual practice.

This previous section builds on a Chinese proverb: "The path to wisdom begins by calling things by their right names." It is important to note that there are key differences between performance pay, differentiated pay, and the traditional step and lane system (or salary schedule, or lock-step systems). Teachers' unions and those opposed to any kind of performance-based approach to compensation frequently use the term merit pay to refer to performance pay plans and to disparage a performance-based approach. Donald Gratz (2009a) elaborates:

> Teacher unions, among others, often view merit as a subjective judgment made by a principal or other supervisor… They see merit pay as a thinly disguised example of an "old boy" network, in which a principal (or superintendent or school board) rewards favored teachers … a subjective and unaccountable measure of a teacher's worth that puts teachers at the mercy of their supervisors and therefore of politics and favoritism (p. 11).

That is, the term merit pay is associated with these disparaging views of performance-based compensation or is associated with old models and attempts at tying pay to performance. As such, this term will be avoided in this dissertation.

As we have seen through this discussion, when one goes outside the traditional step and lane pay system, there can exist a great deal of complexity and variation in educator compensation. Understanding what is, and what is not, performance pay is a fundamental step.

Performance Pay, Measurement and Student Achievement

Of key importance in the debate over performance pay are the questions of appropriate measurement of performance and the question of if performance pay has an impact on student achievement. While this study is not centrally concerned with either of these questions, but rather is focused on the question of teacher motivation as it relates to performance pay, it is necessary to explore the research on: (a) the complexity of implementing these systems, (b) the creation of valid and reliable performance measures, and (c) student achievement as it relates to performance pay.

Opposition and Complexity

A number of studies suggests that modern performance pay implementations have had a poor track record of support and success among educators (Heneman & Young 1991; Ballou & Podgursky 1993; Springer et al. 2010a), particularly where teachers were organized (Ballou, 2001). Education theorist Alfie Kohn was written and opined copiously on the idea

that performance pay and education are incompatible concepts due to the fundamental conflict between the behaviorist and altruistic ideas discussed previously (Kohn 1993, 2003).

More broadly, studies of performance pay in other government agencies have found it to be implemented poorly and conclusions have been rather pessimistic and negative about the probability of future success of these pay schemes in the public sector (Ingraham, 1993; Kellough & Lu, 1993; Milkovich & Wigdor, 1991; Perry, Mesch, & Paarlberg, 2006).

By definition, performance pay must be based on some indicator of performance. Defining what this performance is and measuring it are critical technical challenges to any performance pay system and these metrics are often more subjective and difficult to define in a public sector setting where more objective metrics are present in private sector endeavors (units made or sold, profit, etc). Further complicating the possibility of a successful educational implementation of performance pay is the complex and daunting task of accurately measuring quality teaching and student achievement.

Regarding quality teaching, a number of research articles have appeared which document that a critical

complexity to performance pay is the ability to accurately measure this concept. Quality teaching is a complex and contextual concept that occurs in a constantly dynamic environment, swirling with a number of competing and confounding influences. Studies have identified these complexities as problematic in successfully implementing a performance pay system (Ballou, Sanders, & Wright, 2004; Murnane & Cohen, 1986) and Podgursky and Springer (2007) review these complexities and research supporting their existence and problematic nature in detail.

While the concept of teacher quality is complex and our measures of it are imperfect, there have been several studies over the past 30 years that do show positive results for a principal's ability to evaluate and successfully identify quality teachers (Armor et al., 1976; Cooper & Cohen, 1997; Dee & Keys, 2004; Jacob and Lefgren, 2005; Murnane, 1975; Sanders & Horne, 1994;). Thus, while our ability to define and measure quality teaching as an input shows some promise, it is still evolving. Large scale efforts have emerged across the country to define and accurately measure quality teaching through teacher evaluation. To a large degree, these efforts are due to the influence on policy of the landmark position paper on the subject of teacher evaluation from The New Teacher

Project called "The Widget Effect" (Weisberg, Sexton, Mulhern, & Keeling, 2009).

While measures of effective teaching input as gathered through teacher evaluation instruments are just beginning to emerge in terms of being a valid and reliable system, measures educational output have grown tremendously number and sophistication. This is not to say that any of these assessments or methods of analysis are perfect measures for all students, in all academic subjects, and at all times. Rather, it is to say that we have many more quality assessments from which to make inferences about student ability and teacher quality than ever before and this trend appears to be increasing. This dramatic increase in and improvement of our capacity for better student assessment systems comes in no small part to the accountability requirements under 2001's No Child Left Behind Act (2001), which requires states to create systemic core subject assessment systems or face being shut out of federal funding for education. While NCLB is certainly not without its critics, the argument can certainly be made that the law spurred the creation of several standardized state assessment systems in a relatively short period of time. Thus, there are now reading, math, and science assessments across multiple grades in every state in the country and

many states have assessments in content areas outside these three core areas.

Assessment data is one part of measuring student performance, or output. However, how assessment data is analyzed and what inferences are drawn from it are critical points. NCLB mostly requires states to develop "attainment" based analysis methods which look at the percentage of students who were at or above some state-defined proficiency bar. As student performance on these assessments is heavily influenced by student variables such as economic condition and disability, it is not surprising that many states and districts fail to meet NCLB requirements in special education or as they become more racially and economically diverse. These attainment-based methods of looking at student data are limiting the goal is to make an inference on performance because these methods do not take into account student starting points or the important contextual variables known to have an impact on results on standardized tests.

Value-added analysis has emerged as a fairly controversial way of making an inference on teaching performance for teachers in tested subjects and grades. Value added analysis uses a student's own historical test results to create a predicted future score, thus allowing

each student to act as their own statistical control and removing much of the effects of race, economic condition, and disability that heavily influences achievement results. By evaluating how several students assigned to a teacher perform in relation to their predicted result, it is possible to make an inference about teacher quality using the value added method. While the debate rages over the statistical accuracy of these measures(Baker et al., 2010; Goldhaber, 2010; Lockwood & McCaffrey, 2007) it is now argued that through the use of value-added analysis provides a fairly sound way of inferring teacher effectiveness, as measured by student academic progress, while controlling for individual student characteristics (Glazerman et al., 2010).

While value added analysis has the potential to provide some of the information needed to create an estimate of teacher effectiveness, output measures for the majority of teachers remain elusive. Using typically tested subjects and grades only provides us with data on approximately one-third of teachers. While this can be expanded through adding additional tested subjects and grades and by adding end-of-course exams, handling the great number of teachers for whom value added estimates cannot be calculated is a consideration if a school

district is to construct a performance pay system using a student outcome measure. Several districts nationally have implemented and continue to experiment with how to include teachers in the untested subjects and grades in a performance-based system (Adams Simon, 2009).

Certainly one reason why the step and lane pay system has persisted for so long, and one reason why schools face difficulty in moving toward a performance-based approach, is the relative ease and objectivity with which the two metrics by which teachers are typically paid, namely years of experience and education credits, can be objectively measured.

Successes

While implementing a performance pay system is complex and contentious from a theoretical and practical standpoint, there are also several studies which show what Podgursky and Springer (2007) characterized as positive effects of performance pay systems on student achievement.

International studies from India, Kenya, the United Kingdom, and Israel all show some positive student achievement as a result of schools implementing performance pay systems (Atkinson, Burgess, Croxon, Gregg, Popper, Slater, & Wilson, 2004; Glewwe, Ilias & Kremer, 2010; Lavy 2002, 2004; Muralidaran & Sundararaman, 2006). While these

schemes and systems of performance pay in these studies are varied, and certainly the educational contexts are different, these studies do indicate some support for the idea that implementing a performance pay system leads to improved student achievement.

Correlation studies in the United States have also yielded similar results. Studies from Arkansas, Dallas, and Michigan show improved student achievement as a result of implementing performance pay systems (Clotfelter and Ladd, 1996; Eberts, Hollenbeck, & Stone, 2002; Winters, Ritter, Barnett, & Greene, 2006). Figlio and Kenny (2007) performed a national study using the National Educational Longitudinal Survey of 1988 and the 1993-94 Schools and Staffing Surveys to determine if the existence of a performance pay scheme had an effect on student achievement. Figlio and Kenny found that incentive pay schemes did in fact have significant and positive effects on student achievement. They estimated the impact of this effect to be comparable to a one standard deviation decrease in days absent for an average student, and an increase in maternal education of 3 years.

Along with the research studies that have outlined the successes of performance pay systems in terms of student achievement, there are several districts and states that

have successfully implemented these systems and sustained them for several years, such as Minnesota's Q-Comp system and Florida's STAR program (replacing the MAP program which was also a performance-based system). Evaluation results from the Benwood Initiative in Tennessee, Denver's ProComp system, the evaluation of the national TAP System, and the Texas districts participating in the D.A.T.E. program all show that performance pay, when implemented as part of a comprehensive and intensive education reform effort, are associated with positive correlations with student achievement (National Institute for Excellence in Teaching 2010; Silva, 2008; Springer et al., 2010; Wiley, Spindler,& Shubert 2010).

Human Motivation and Performance Pay

According to a literature review on the subject of performance pay by James Perry, Trent Engbers, and So Yun Jun (2009), two intertwined psychological theories provide support for the use of performance pay.

First, from business management research, expectancy theory (in the context of performance pay) posits that employees will put forth effort if they expect that it will result in an outcome they value (Van Eerde & Theirry, 1996). To put it another way, organizations need to create rewards for behaviors they want to see in employees and

make sure they are rewards the employees want. If the organization does this, employees will work harder to get these rewards (Vroom & MacCrimmon, 1968).

This expectancy theory builds on the behaviorist/economic framework outlined in Chapter I. Expectancy theory holds that behaviors will change to meet the goals to which desired economic outcomes are attached.

The second important, and closely related, theory Perry, Engbers, and Yun Jun (2009) bring forward is reinforcement theory, which has a foundation in Skinner-esque behaviorism (Skinner, 1938). The behaviorist paradigm holds that there is a direct relationship between a desired behavior (high performance) and a desired consequence (pay). Taken together, these two theories (expectancy theory and reinforcement theory) suggest that pay can be used to create consequences for desired behaviors such as high performance that will in turn reinforce the behaviors (Perry, Mesch, & Paarlberg, 2006).

Supporters of performance pay frequently use these simple causal arguments to advance the idea of performance-based compensation. Taking the business world as an example, as businesses incentivize production or sales through higher pay, workers and sales persons put out more effort or innovation which yields increased results.

Similarly, the thinking goes that by incentivizing quality teaching through higher pay you can expect to see greater effort or innovation on the part of teachers and greater achievement from students.

This framework for thinking about how and if money can motivate teachers was dealt a serious blow with the release of the Vanderbilt POINT study (Springer et al., 2010). The POINT study was an experimental approach designed to evaluate if a pure cash for improved test scores model of performance pay could generate improvements in student achievement results as measured through value-added. Conducted in the public schools in Nashville, Tennessee, POINT offered bonuses of up to $15,000 if middle school math teachers in the experimental group could get high level value added gains from their students in comparison with teachers in a control group. After 3 years of study, the results from POINT indicated only very slight and conditional differences between the two groups. Summarizing the results in a press release, the authors of the POINT study concluded "If teachers know they will be rewarded for an increase in their students' test scores, will test scores go up? We found that the answer to that question is no" (National Center on Performance Incentives, 2010).

These behavioristic/economic approaches to teacher motivation and response to financial incentives hinges on a change in effort and approach to teaching as a result of being offered an incentive. If this model is true, then it must also be assumed that teachers inherently have the knowledge and ability to be better educators for students, but have been holding back and waiting for the right set of incentives before they do their best for kids.

Also, Perry, Engbers, and Yun Sun (2009) point out that the behavioristic/economic model may have complications when applied to a public sector field like education. Two other intertwined and competing theories emerge which confound the idea that teachers are influenced primarily by the economic influences in expectancy theory and the behaviorist influences in reinforcement theory.

Building on the thinking of Perry, Engbers, and Yun Sun and standing in opposition to the behavioristic/economic psychological paradigm is what I call the altruistic/PSM (Public Service Motivation) paradigm. This opposing framework holds that people, and particularly some types of people - like teachers - are actually motivated to help others and to accomplish some larger vision or goal than personal financial reward.

Central to the altruistic/PSM approach is self-determination theory (Deci & Ryan, 2004). Self-determination theory holds that individuals are motivated, not by extrinsic rewards or punishments, but by the desire to determine their own outcomes and by a desire to take part in some activity because it is intrinsically rewarding, interesting, and satisfying. This theory holds that rather than an extrinsic reward (like compensation), individuals are primarily motivated by the need for competence (in this sense the need to be qualified and effective at a specific job and able to control the environment and predict outcomes), the need for autonomy (self-determination), and the need for relatedness (need to care for and be related to others socially).

Author and futurist Daniel Pink built on Deci and Ryan's self-determination theory in his popular work *Drive: The Surprising Truth about What Motivates Us* (2009). Pink reframed Deci and Ryan's work into three areas: Autonomy - or the freedom to direct our own lives; Mastery - the desire to get better at meaningful work; and Purpose - the desire to work in service of something larger than ourselves. Pink argues that performance pay approaches are effective in the short term or in getting simple tasks

complete, but they can actually be counter-productive when it comes to complex and creative tasks, like teaching.

Public Service Motivation theory argues that the purpose component of Pink's framework is stronger in some people than in others. As applied to teachers, PSM theory holds that individuals in the public service fields intend to and are motivated to "do good for others and shape the well-being of society" (Perry & Hondeghem, 2008, p.3). The behaviors of these individuals are driven by values that are grounded in the greater purpose of the organization for which they serve, that these individuals engage in altruistic behaviors where they are willing to sacrifice for others without expectation of reciprocal benefits, and that these individuals exhibit what Perry and Hondeghem call prosocial behaviors, which advances that these individuals engage in activities believed to benefit other people or society as a whole. Perry and Hondeghem go on to discuss that there is "moral significance" and meaning to the work these individuals do. Michael Fullan (2008), in his work *The Six Secrets of Change: What the Best Leaders Do to Help Their Organizations Survive and Thrive* argues that a key element to having a successful school (or any organization for that matter) is in "connecting peers with purpose" (p.39). From this, Fullan means that great

organizational leaders understand that they must engage employees in the moral purpose of the organization and their motivation will follow. In Fullan's words, the organization should rally "around a higher purpose that has meaning for individuals as well as the collectivity" (p. 49).

These two paradigms of motivation (behavioristic/economic and altruistic/PSM) stand in contrast to each other. However, particularly for teachers, there is mounting evidence that the altruistic/PSM paradigm has the stronger influence.

Drawing from Frederick Herzberg's "two-factor" theory of human motivation (1959), it is certainly possible that these two competing theories are not mutually exclusive of one another. Herzberg argued that there exists a set of "motivators" that include achievement, recognition, the work itself, responsibility, advancement, and growth. Along with these motivators, Herzberg argued that there was a set of "hygiene" factors that include company policy, supervision, relationship with boss, work conditions, salary, relationship with peers, and security. Herzberg argued that these two sets of factors were both important but that the motivators are what primarily drive employee motivation. The hygiene factors were necessary and

important to establish a level of satisfaction with an employees' work and if any of these were absent or underserved they could act to de-motivate employees and undermine morale. However, Herzberg argued that, while these hygiene factors were important, they could not serve to drive employees to higher performance. Herzberg argued that those factors in the motivators category were actually what could serve to inspire employees to higher performance.

Herzberg's work serves as a point of unification between the behavioristic/economic paradigm and the altruistic/PSM paradigm. From Herzberg's theories, it should be expected that both paradigms are important to teachers in a performance-based pay context. However, the altruistic/PSM paradigm should be a stronger motivator.

What Teacher Motivation Means for Performance Pay

The question of what motivates teachers is a foundational psychological point to consider as the national debate around performance-based compensation continues. If teachers are only motivated for altruistic reasons, then all performance-based compensation schemes are doomed to fail because they are not doing the work for the money, therefore an additional incentive will not motivate them to work harder or improve. On the other

hand, if teachers are motivated by money, as the behavioristic framework would lead one to believe, then performance-based pay systems are exactly the right approach for using the finite resources that schools have to dramatically improve teaching and learning. Further still, a third possibility emerges. What if these two competing paradigms are not mutually exclusive of one another? That is, what if teachers can be motivated to help kids (altruism) and still be incentivized by the right set of compensation elements (behaviorism) to change and improve? This dissertation attempts to address these questions.

CHAPTER III

RESEARCH DESIGN

Purpose Statement

The purpose of this study was to use quantitative data collected from Eagle County schools in Colorado to investigate the relative presence, absence, or coexistence of the behavioristic/economic and altruistic/PSM paradigms in terms of teacher motivation in a performance-based compensation context. This chapter contains information on the source of data and methods, subjects, instrumentation and data collection procedures, and the research questions for this study.

Source of Data and Methods

A survey design and quantitative methods were used to answer the question of teacher motivation in the context of compensation. The data was collected through an online survey of teachers working in Eagle County schools in the spring of 2010. This survey was administered to the staff as part of the required evaluation process for the 5-year federal Teacher Incentive Fund (TIF) grant the district started receiving in 2006. The major focus of the required evaluation process for this grant was to capture information on how teachers' perceptions of performance-based compensation programs might change over time and how

these compensation systems may have affected their approach to instruction and professional learning. As Eagle County schools' teachers are in a nearly unique condition of having worked under a compensation system driven primarily by performance and market-based factors for nearly a decade, the data collected from them presents a unique opportunity to measure motivation of public educators who have been exposed to arguably the most aggressive implementation of a performance-based compensation system in the nation.

As the data in this study is quantitative, the methods of analysis were quantitative. Specifically, I used simple descriptive statistical techniques including cross-tabulations.

Subjects

The subjects surveyed were all certified teachers working in the district. For ECS, this included Career Teachers, who teach 100% of the instructional day, Mentor Teachers, who teach 70% of the instructional day and are released 30% of the day for evaluation and instructional coaching of other teachers, and Master Teachers, who teach 30% of the day and are released for the remainder of the day for evaluation and instructional leadership responsibilities for the school. The survey was completed

by all types of teachers working in the district, including both elementary and secondary, general education and special education teachers, instructional core teachers and specials teachers (art, music, PE, etc.), and certified staff working in supporting roles like counselors, speech language pathologists, and teachers on special assignments from the district. It is notable that the performance pay system for all these teachers is fundamentally the same, including both individual and group (building-wide and district-wide) reward structures.

Instrumentation and Data Collection Procedures

Questions for the survey were designed after reviewing outcomes from the Teacher Incentive Fund grant (for which this data is a component of the required evaluation) and included input from district's Director of Research and Evaluation (who was also the principal investigator of the evaluation process for the federal TIF grant), the district's Director of Human Resources (myself at that time), and an outside contracted research and evaluation consultant firm.

After questions were designed and vetted by these three individuals and checked against the grant outcomes, the survey was then pre-tested by having a few teachers take the survey and provide feedback about the clarity of

the questions given their experience. Substantial revision was made to the questions and these were then transposed to an online survey instrument.

Invitations to participate in the online survey were sent to all teachers in the district via the district email system and through the district electronic news system. Follow-up invitations, which attempted to push up the overall number of responses, were sent on three occasions over the course of data collection - a 24 day period from May 4, 2010 through May 28, 2010.

The survey instrument grouped 80 items together to form six sets of items, or scales, based on consistent and coherent content. These scales are: Performance-Based Compensation; Teaching Practices and Views toward Teaching; Teacher Evaluation System; Student Assessment; Job Satisfaction and Support; and School and Professional Climate.

Cronbach's alpha indicates that all but one scale demonstrate high internal reliability, ranging from .83 to .93. One scale, "Student Assessment," demonstrates moderate reliability, with a Cronbach's alpha of .69. With eight items, this is the shortest scale and, therefore, is expected to produce the lowest reliability coefficient. Reliability is a function of the number of items in the

scale; that is, the fewer items there are in a scale designed to measure a particular concept, the less reliable will be the measurement of that concept.

To preserve confidentiality, the electronic survey instrument did not collect usernames, passwords, or individual names. While the system did collect the Internet Protocol (I.P.) addresses of the respondents, because the majority of teachers responded using Eagle County schools' internet access (thus all having the same I.P. addresses) it was not possible to single out the identity of any single respondent.

While the exact number of staff members for any school district which has more than just a very small enrollment varies slightly on any given week, counting both full and part time teachers, Eagle County Schools employed an estimated 471 certified teachers in May of 2010. Of these, 305 teachers responded to this survey, providing an approximate response rate of 65%. Respondents to this survey came from schools in the district that participated in the performance pay system and had a balance in terms of teacher role (career teachers, mentor teachers, master teachers, and support teachers) that was representative of the district overall. Slightly more elementary teachers responded to the survey than proportional to the actual

number of elementary teachers working in the district, but the survey did capture responses from early childhood, elementary, middle, and high school teachers as well as those working in multi-grade roles.

Research Questions

Data from the Eagle County schools evaluation survey will be used to answer the research questions posed relating to the competing theoretical frameworks of the altruistic/PSM paradigm and the behavioristic/economic paradigm. The specific research questions addressed in this dissertation are:

1. To what extent are teachers motivated for behavioristic/economic reasons and extrinsic rewards?
2. To what extent are teachers motivated for altruistic/PSM reasons and intrinsic rewards?
3. To what extent can teachers be simultaneously motivated by behavioristic/economic and altruistic/PSM means?
4. To what extent are behavioristic/economic or altruistic/PSM motivators more dominant in what motivates teachers?

Table 3 presents these research questions in a matrix format, showing the survey data contained in the Eagle

County evaluation survey that relate to that particular question. As can be seen in Table 3, the Eagle County evaluation data contains a number of response items that provide answers to the research questions. Quantitative methods in the form of descriptive statistical analysis, including cross tabulations, will be used to answer the research questions.

Table 3

Research Matrix

Research Question	Data Source	Instrumentation (Survey Questions)	Analysis Method
1. Are teachers motivated for behavioristic/economic reasons and extrinsic rewards?	Online Survey	• A major motivator for me is earning more money. • I have a strong desire to earn a raise or a bonus. • My evaluation is important because my pay is attached to it. • Student assessment results are important because pay is attached to them. • I work harder because of performance pay.	• Descriptive statistical analysis.
2. Are teachers motivated for altruistic/PSM reasons and intrinsic rewards?	Online Survey	• I work harder because of performance pay. • A major motivator for me is helping others. • My evaluation is important because it helps me be a better teacher for my students. • Student assessments are important because they help in guiding instruction for my students.	• Descriptive statistical analysis.
3. Can teachers be simultaneously motivated both by behavioristic/economic and altruistic/PSM means?	Online Survey	• A major motivator for me is earning more money. • A major motivator for me is helping others. • More attention is paid to evaluations because of performance pay. • More attention is paid to student assessments because of performance pay.	• Crosstab and correlation of responses from altruistic and behavioristic questions. • Descriptive statistical analysis.
4. Are behavioristic/economic or altruistic/PSM motivators more dominant in what drives teachers?	Online Survey	• A major motivator for me is earning more money. • A major motivator for me is helping others.	• Crosstab and correlation of responses from altruistic and behavioristic questions.

CHAPTER IV

PRESENTATION AND ANALYSIS OF FINDINGS

Introduction

The purpose of this study was to analyze quantitative survey data gathered from teachers working in the Eagle County School District in Colorado and to answer four specific questions regarding teacher motivation in a performance-based compensation system. More specifically, the study examined: whether teachers were more strongly motivated by a behavioristic/economic paradigm or an altruistic/public service motivation paradigm; if they were motivated by both paradigms simultaneously; and if there was evidence that one paradigm was stronger than the other. This chapter presents the data and its analysis as related to the four primary research questions.

Nature of the Study

The research subject population for this study consisted of public school teachers in all grades and subject areas working in the Eagle County School District of Colorado in the spring of 2010. All of the subjects were provided an opportunity to participate in this study through responding to an online survey on their opinions regarding compensation and measures of educator effectiveness being utilized in the district. While the

actual number of teachers working in any district fluctuates slightly through the year, it is estimated that the number of both full and part time teachers working in Eagle County Schools at the time of this data collection was 410. Of these, 278 responded to this survey, providing an approximate response rate of 68%.

Potential respondents received a total of four email notices delivered via the district's work email system with instructions on how to complete the survey and a link to the online data collector. Questions on the survey were divided into five sections. The first section asked basic demographic, job placement, and experience questions. The second section asked Likert scaled questions on opinions of and support for performance-based compensation. The third section asked a series of questions on the perceived degree of impact performance-based compensation had on respondent teaching. The fourth section contained Likert scaled questions on support for the district's teacher evaluation system (used to determine annual raises) and support for the district's assessment system (used to determine annual raises). The last section contained questions about job satisfaction and perceived levels of professional support. Respondents were also provided the opportunity to give

qualitative responses via open text options scattered throughout the entire survey.

Presentation and Analysis of Findings

All data collection took place in the spring of 2010, specifically in the months of February and March. This time was specifically and intentionally chosen so as not to be immediately after teachers returned from winter break and not to be too near the end of the school year; both of which are considered hectic times for teaching staff.

Table 4 presents career specific and demographic information from the survey so that we have a better idea of how representative the information is. ECS uses a modified version of the Teacher Advancement Program professional development/professional learning community system and career path model for its teachers. This program allows for Career, Mentor, and Master teacher roles in schools. Career teachers teach 100% of the day and make up the majority of the teacher workforce. Mentor teachers teach 70% of the day and are freed up 30% of the day to coach and serve in a mentoring role to other teachers. Master teachers teach 30% of the day and are freed up the other 70% to evaluate and coach other teachers and to serve as instructional leaders for their buildings.

Table 4

Career and Demographic Statistics

Variable	N	Percentage
Teacher Role		
Career Teacher	180	63.4
Mentor Teacher	51	18.0
Master Teacher	24	8.5
Specialist	29	10.2
Grade Level		
Early Childhood	4	1.4
Elementary	162	56.3
Middle School	49	17.0
High School	66	22.9
Multiple	7	2.4
Experience		
1 or less	11	4.4
2-3 years	20	7.9
4-5 years	24	9.5
6-8 years	29	11.5
9-12 years	62	24.6
13-16 years	36	14.3
17-20 years	15	5.6
21-25 years	31	12.3
26 or more years	24	9.5
Highest Degree		
BA	120	42.4
MA	160	56.5
PhD (or other terminal)	3	1.1
Gender		
Male	49	17.6
Female	229	82.4

Mentor and Master teachers received a $5,000 and $11,500 salary addition respectively in the 2009-2010 school year in ECS. The data collected in this study indicated that 63.4% of respondents were Career Teachers, 18% were Mentor Teachers, 8.5% were Master Teachers, and 10.2% were

specialist teachers of various kinds (media teachers, speech language pathologists, instructional coaches, etc.). These numbers match closely the proportions of these teacher roles that exist in the overall population of teachers in the district. We also see that a majority of respondents were elementary teachers (56.3%) with lesser numbers of middle school teachers (17.0%), high school teachers (22.9%), and teachers in multiple grade settings (2.4%). From this, we know that elementary school teachers were over-represented in the sample whereas middle school teachers were under-represented related to the population of teachers in ECS. These differences from the sample to the population were not dramatic. Looking at those factors which are traditionally associated with the way nearly all teachers in the United States are compensated (experience and education level), Eagle County was found to have a broad spread of teacher experience levels with a plurality of responding teachers having between 9-12 years of experience. Master's degrees were held by 56.5% of ECS teachers while 42.4% held a bachelor's degree, and 1.1% held a doctorate or some other terminal degree. These statistics do not put the ECS respondents far from the Colorado average of 54% of teachers holding a master's degree or above (Roza & Miller, 2009). Most respondents to

the ECS survey were female at 82.4%, though this is not particularly disproportionate from the overall ECS teacher workforce, which is also predominantly female.

Overall, these career and demographic numbers suggest a good sampling of the district's teacher workforce and therefore the results can be generalized to the general population of ECS teachers. While there are certainly generalizability issues when using point in time data collection from one district, this is not believed to be a cause of concern for the present study.

Research Question 1: The Behavioristic/Economic Paradigm

In their literature review on the theoretical, psychological underpinnings of performance-based compensation, Perry, Engbers, and Yun Jun (2009) put forth two intertwined ideas that set up the behavioristic/extrinsic paradigm.

First, expectancy theory holds that behaviors will change to meet the goals to which desired outcomes are attached. Second, reinforcement theory indicates there is a direct relationship between behavior and consequence. More specific to the economic context of performance-based compensation, Vroom and MacCrimmon (1968) put forth that employees will work harder for financial rewards.

Together, these ideas form the foundation of the behavioristic/economic paradigm.

Table 5 presents the results from the Eagle County Schools survey data from five survey questions that directly address the presence of the behavioristic/economic paradigm as it relates to educator motivation.

Likert scaled responses to the prompt, "I have a strong desire to earn a raise or bonus," revealed that 26.9% strongly agreed with the statement and 50.6% agreed. Comparatively, 17.6% disagreed and only 4.9% strongly disagreed with this statement. Aggregating the agree results together for this question shows that 77.5% of respondents either strongly agreed or agreed with the prompt, I have a strong desire to earn a raise or bonus.

It is important to keep the Eagle County schools context in mind when interpreting these results. As this is a school system which has completely abandoned the traditional step and lane pay system, raises are earned by evaluation scores and bonuses are earned through an index of student achievement results. These data clearly show that a large majority of the respondents from Eagle County desire to earn a raise or bonus. The results satisfy, at least in part, an aspect of the behavioristic/economic

paradigm in that we see that the large majority of teachers do in fact want the incentive.

Table 5

Evidence of Behavioristic/Economic Paradigm	Percentage			
	Str. Agree	Agree	Disagree	Str. Disagree
I have a strong desire to earn a raise or bonus.	26.9	50.6	17.6	4.9
A major motivator for me is earning more money.	15.2	35.9	34.2	14.7
My evaluation is important because pay is attached to it.	22.0	37.8	30.3	10.0
Student assessments are important because pay is attached to them.	9.5	38.8	36.6	15.1
I work harder because of performance pay.	7.2	26.5	52.6	13.7

Responses to the prompt, a major motivator for me is earning more money, reveals somewhat less support for the behavioristic/economic paradigm. Results are fairly evenly split on the agree/disagree side of this question, with 15.2% strongly agreeing and 35.9% agreeing, but 34.2% disagreeing and 14.7% strongly disagreeing. Aggregating these results together, 51.1% of respondents were in some level of agreement while 49.9% were in some level of disagreement.

Interpreting these results along with the responses to the previous question, it is inferred that while teachers do seem to want the financial rewards of bonuses or raises, this data suggests these are not major motivators for them.

Again keeping context in mind, it is important to remember that raises in Eagle County schools are determined by evaluation scores. The behavioristic/economic paradigm would predict that teachers would place greater importance to evaluation scores because of this association. This is at least partially validated by the respondent results to the prompt "My evaluation is important because pay is attached to it." 22% of respondents strongly agreed with this statement and 37.8% agreed, totaling 59.8% in some level of agreement with the prompt. Opposing this were 30.3% of teachers who said they disagreed with the statement and 10% who strongly disagreed, totaling 40.3% on the disagree side of the statement. The results from this data indicate some support for the behavioristic/economic paradigm as 59.8% of respondents indicated their evaluation was important because pay was attached to it and the largest response group fell in the "agree" category with 37.8%.

Eagle County Schools' teachers also get an annual bonus paid on an index of student assessment results. This

index is calculated at both the building and district level, so the employees have less direct influence over it in comparison with their evaluation scores, which are individualized to each employee. The last question on table 5 addresses this student achievement to pay bonus link.

When asked how they agreed with the statement "Student assessments are important because pay is attached to them," respondents' results were mixed, with slightly more disagreeing with the statement. 9.5% of respondents strongly agreed and 38.8% agreed. Conversely, 36.6% disagreed and 15.1% strongly disagreed. Aggregating the disagreement results together, a majority of respondents disagreed with the statement "Student assessments are important because pay is attached to them."

Interpreting the final question on table 5 gets to the heart of a central underpinning of the behavioristic/economic paradigm on which the expectancy theory is based. Again, expectancy theory holds that behavior will change to meet the desired incentive. Responses to the prompt "I work harder because of performance pay" call this into question. Only 7.2% of respondents strongly agreed with this prompt and 26.5% agreed. Conversely, 52.6% disagreed and 13.7% strongly

disagreed. Totaling these, only 33.7% of respondents were on the agree side of this statement in comparison with 66.7% who were in some level of disagreement with the prompt. As a central underpinning of the behavioristic/economic paradigm is that behaviors would change in pursuit of the desired incentive, we see limited support for this notion as respondents did not agree with the statement that they worked harder because of performance pay.

Still, some conditional support for the behavioristic/economic paradigm is revealed by the results. In looking at the responses that related to the importance of assessments and the responses to the importance of evaluation scores because pay is linked to them, conditional support was found for the behavioristic/economic paradigm. However, this support may have been determined by how closely tied the individual was to the measure (respondents are individually linked to evaluation scores and are linked by building to assessment results).

In sum, data reveals conditional support for the behavioristic/economic paradigm. It appears that most teachers in Eagle County schools do in fact have a strong desire to earn a raise or bonus and they place greater

importance on those measures that are most closely individualized to each teacher. However, teachers do not appear to be primarily motivated by money, and a strong majority indicated they did not work harder because of performance pay.

From this, it is inferred that, while there is some evidence of the behavioristic/economic paradigm at play in the question of what motivates teachers, financial incentives are not their primary motivators, so the predicted behavior change in response to incentives that the behavioristic/economic paradigm predicts might not be seen. As Perry, Engbers, and Yun Sun (2009) indicated, there are a number of complicating factors at work in teacher motivation that may create issues with implementing performance pay schemes built on behavioristic/economic theoretical underpinnings.

Research Question 2: The Altruistic/PSM Paradigm

Standing in opposition to the behavioristic/economic paradigm is the altruistic/PSM paradigm. This framework holds that public service employees (like teachers) are more motivated to help others and to work in service of a larger goal or vision than to seek personal or extrinsic rewards.

Drawing heavily on Deci and Ryan's self-determination theory (2004) and Perry and Hondegem's (2008) public service motivation theory, the altruistic/PSM paradigm predicts that teachers will be most strongly motivated by the desire to help others.

Table 6 presents the results from the Eagle County schools survey data for the three survey questions that directly address the presence of the altruistic/PSM paradigm as it relates to educator motivation.

Table 6

Evidence of the Altruistic/PSM Paradigm	Percentage			
	Str. Agree	Agree	Disagree	Str. Disagree
A major motivator for me is helping others.	73.4	26.6	0.0	0.0
My evaluation is important because it helps me be a better teacher for my students.	35.7	46.9	13.3	4.2
Student assessments are important because they help in guiding instruction for my students.	42.2	49.8	5.9	2.1

Likert-scaled responses to the prompt "A major motivator for me is helping others," resulted in strong evidence of the altruistic/PSM paradigm. A clear majority

(73.4%) of responding teachers indicated they strongly agreed with this statement and 26.6% indicated that they were in agreement with the statement. All told, every educator who responded to this survey indicated they were in some level of agreement with the prompt.

Table 5 shows how important teachers felt evaluation and assessment results were because pay was attached to them. In Table 6, questions are displayed showing how important teachers feel evaluations and assessment results are to helping students.

For evaluations, 35.7% of respondents strongly agreed and 46.9% agreed with the prompt that evaluations were important because they made teachers be better for their students. Only 13.3% disagreed and only 4.2% strongly disagreed. In total, 82.6% agreed with the statement.

The altruistic/PSM motivations came through even more strongly on the assessment results. When teachers were asked if student assessments were important because they help in guiding instruction for students, 42.2% strongly agreed with the prompt and 49.8% agreed. Only 5.9% disagreed and 2.1% strongly disagreed. In total, 92% of teachers agreed or strongly agreed with the prompt, while only 8% disagreed or strongly disagreed.

The survey data (see Table 6) serves as strong evidence to support the altruistic/PSM paradigm. That is, the data suggests that teachers are strongly motivated to help others and are especially motivated to help their students. These results confirm, at least in part, what the altruistic/PSM paradigm would predict.

Research Questions 3 & 4: Simultaneity and Strength of Behavioristic/Economic and Altruistic/PSM Motivation

While the paradigms of the behavioristic/economic view and the altruistic/PSM view are competing theories of what motivates teachers, another possibility is that the two paradigms are not mutually exclusive. More specifically in the case of the performance pay discussion, can teachers be motivated for money and be motivated to help others. Research question 3 specifically asks if these paradigms can exist simultaneously.

It also may be the case that even if these paradigms exist simultaneously, one may be more dominant (or stronger) than the other. Research question 4 asks whether or not one of these paradigms is stronger than the other in the teachers surveyed.

The results to research question 3 and research question 4 are presented simultaneously because the questions are intertwined. In looking at whether the

behavioristic/economic and the altruistic/PSM paradigms exist simultaneously, we can also investigate the relative strength of the paradigms in comparison with each other.

Table 7 presents a cross tabulation of responses to two survey questions. One question asked teachers if a major motivator for them was helping others (the altruistic/PSM paradigm). The other question asked if a major motivator was earning more money (the behaviorisitc/economic paradigm). The results are displayed in Table 7:

Table 7

A Cross Tabulation of Behavioristic/Economic and Altruistic/PSM Motivation

	A major motivator for me is helping others.		
A major motivator for me is earning more money.	N Counts Strongly Agree	Agree	Row Totals
Strongly Agree	27	7	34
Agree	61	22	83
Disagree	51	27	78
Strongly Disagree	29	5	34
Column Totals	168	61	229

Table 7 clearly shows that a major motivator for teachers is helping others and this finding lends more support to the altruistic/PSM paradigm. One hundred percent of the teachers were in some level of agreement with this statement and 73% of them (168 of 229) strongly agreed with it.

The behavioristic/economic paradigm also sees some support among the respondents, though to a lesser degree. Fifty two percent of teachers said they were in some level of agreement with the statement that a major motivator for them was earning more money, while 48% were in some level of disagreement with the statement. Most responses (67%) centered in the middle of the Likert scale (on either agree or disagree, but not in the "strongly" categories).

The information in Table 7 provides some insight to research question 3, as it shows some evidence that the behavioristic/economic paradigm and the altruistic/PSM paradigms are not mutually exclusive. While the evidence in support of the behavioristic/economic paradigm is clearly not as strong as the altruistic/PSM paradigm (a point which will be addressed in research question 4) these results show that the two are not mutually exclusive. While all teachers appear to be strongly motivated to help others, more than half of them are motivated to earn more money, also. From this, we can draw an inference that the two competing theories are not mutually exclusive.

Research question 4 asked which of these competing paradigms had a stronger influence on motivating teachers. The data (see Table 7) clearly shows that the altruistic/PSM paradigm is dominant in driving motivation

for teachers with 100% of them agreeing that helping others is a major motivator for them. However, the presence of the altruistic/PSM paradigm does not extend to the point that the behavioristic/economic paradigm cannot coexist, though the behavioristic/economic paradigm clearly has less influence.

While the results clearly show that the altruistic/PSM paradigm is dominant in terms of strength in motivating teachers (see Table 7), the question of the strength of the financial incentive was examined in a more nuanced way (see Table 8). In Eagle County schools, evaluation scores determine raises and student assessment results determine annual bonuses. These two compensation mechanisms are clearly built from the behavioristic/economic paradigm in mind. Table 8 illustrates the strength this paradigm may have to attract the attention of teachers to those things to which the financial incentive is attached.

When teachers were asked to rate their level of agreement with the statement, "I pay more attention to my evaluation because my pay is attached to it," 77.2% of respondents either strongly agreed or agreed with the statement versus 22.7% which were in some level of disagreement (see Table 8).

When asked their level of agreement with the statement "I pay more attention to student achievement results because pay is attached to it," 71% of respondents were in some level of agreement with the statement versus 29.1% in some level of disagreement.

Table 8

Attention Focusing Aspect of Compensation	Percentage			
	Str. Agree	Agree	Disagree	Str. Disagree
I pay more attention to my evaluation because pay is attached to it.	37.3	39.9	16.3	6.4
I pay more attention to student achievement results because pay is attached to them.	26.1	44.9	21.8	7.3

These results show clear evidence of the behavioristic/economic paradigm at work. When educator pay is clearly linked to evaluation (as it is in Eagle County Schools in the form of annual raises) nearly 8 in 10 educators say they pay more attention to the evaluation. When pay is linked to student achievement results (as it is in Eagle County Schools in the form of annual bonuses) over 7 in 10 educators say they pay more attention to student achievement results.

From this, we can infer that the behavioristic/ economic paradigm does have the capacity to draw the

attention of educators to those measures to which the reward is attached. This is in line with the theoretical aspects of the behavioristic/economic paradigm that predict that people are attracted to rewards which they want to receive. In this case, the attention of educators is attracted to their evaluation and assessment results.

Summary

These findings suggest the presence of both the altruistic/PSM and the behavioristic/economic paradigms at work in educator motivation.

Teachers are strongly motivated to help others and are particularly motivated to help their students succeed. Teachers are also motivated to earn more money, but this appears to be a secondary drive to the main motivations of altruism and public service. Further, the motivating influence of the behavioristic/economic paradigm seems to weaken when it comes to predicting actual behavior changes in teachers working harder to achieve raises or bonuses.

The evidence presented here also suggests that these paradigms are not mutually exclusive. That is, from this analysis it does not appear to be the case that teachers are exclusively motivated by only altruistic/PSM factors or behavioristic/economic factors. Rather, there is often a blending of these two paradigms at work amongst educators,

though the altruistic/PSM paradigm appears to be the more dominant of the two.

While the altruistic/PSM paradigm certainly appears to be the stronger of these two frameworks, the results of this study suggest that, while the power of the behavioristic/economic paradigm appears to be more limited, we do see evidence of a behavior change in response to the financial incentive through the attraction of the attention of the educators to those measures which compensation is attached.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to investigate the competing motivational views of the behavioristic/economic paradigm and the altruistic/PSM paradigm in the context of a performance-based compensation program. Chapter I presented a broad overview of the concept of performance-based compensation, educator motivation, and the unique place Eagle County schools holds in the development of performance-based compensation systems. Chapter II contained a literature review of the research surrounding performance-based compensation and the research on the foundational theoretical underpinnings of the behavioristic/economic and altruistic/PSM paradigms. Chapter III contained a description of the data used in this study, the specific research questions addressed by the study, and the methodology used to evaluate the data in light of the research questions. Chapter IV contained an analysis of the data from the Eagle County Schools survey. Chapter V offers a summary, conclusion, and recommendations for policy, practice, and future research.

Four research questions were asked: (a) Are teachers motivated for behavioristic/economic reasons and extrinsic

rewards? (b) Are teachers motivated for altruistic/PSM reasons and intrinsic rewards? (c) Can teachers be simultaneously motivated both by behavioristic/economic and altruistic/PSM means? and (d) Are behavioristic/economic or altruistic/PSM motivators more dominant in what drives teachers?

Quantitative survey data gathered from teachers working in the Eagle County school district in Colorado during the spring of 2010 was used in order to answer the four research questions.

Research question 1 was: Are teachers motivated for behavioristic/economic reasons and extrinsic rewards? Perry, Engbers, and Yun Jun (2009) wrote that there are intertwined ideas that set up the behavioristic/extrinsic paradigm: expectancy theory and reinforcement theory. Expectancy theory holds that behaviors will change to meet the goals to which desired outcomes are attached. Reinforcement theory indicates there is a direct relationship between behavior and consequence. More directly related to the economic context of performance-based compensation, Vroom and MacCrimmon (1968) put forth that employees will work harder for financial rewards.

The evidence presented in this research suggests conditional support for the behavioristic/economic

paradigm. Teachers do appear to desire to earn more money, satisfying at least one condition of expectancy theory; that the employees are offered something that they desire in more money. However, the second component - that teachers' behavior would change in pursuit of the money - is not clearly supported by the data presented in this study. The evidence does not indicate that teachers will work harder because of being in a performance pay system.

Research question 2 was: Are teachers motivated for altruistic/PSM reasons and intrinsic rewards? This research question was intended to closely investigate Deci and Ryan's (2004) self determination theory and Perry and Hongdegem's (2008) public service motivation theory, which are at the core of what I have called the altruistic/PSM paradigm.

The evidence presented in this study suggests strong support for the altruistic/PSM paradigm in those questions which asked if helping others was a major motivator and questions about the importance of evaluations and student assessments because they help teachers better serve students. The data clearly showed the presence of this altruistic/PSM motivation paradigm in these responses. Teachers seem more interested in outcomes that help others (the relatedness aspects of Deci and Ryan's (2004) self-

determination theory) and the connection to a higher purpose predicted by public service motivation theory and Fullan's (2008) "connecting peers with purpose" (p.39).

Research question 3 was: Can teachers be simultaneously motivated both by behavioristic/economic and altruistic/PSM means? More specifically, this study sought to investigate if the concepts underlying the behavioristic/economic paradigm and the altruistic/PSM paradigm were mutually exclusive of one another.

Frederick Herzberg (1959) posed a theoretical model suggesting that these competing paradigms need not be mutually exclusive and that they serve different roles for employees. The behavioristic/economic paradigm would fall in Herzberg's hygiene factors and would be useful in establishing a base of employee satisfaction. The altruistic/PSM paradigm would fall in Herzberg's motivational factors, which Herzberg held had the capacity to motivate employees toward higher performance.

The evidence presented in this study suggests that, in many teachers, these paradigms do coexist and that teachers can be simultaneously motivated by the desire to earn more money and to help others. Teachers are rational beings who desire financial incentives. Teachers are also intrinsically motivated beings who want to help others,

particularly their students. This study shows that these two competing paradigms can co-exist.

Research question 4 was: Are behavioristic/economic or altruistic/PSM motivators more dominant in what drives teachers? This research question looked at matters of degree in both paradigms to determine which one seemed to have the stronger pull on educators.

The evidence presented in this study suggests that teachers are primarily driven to help others and thus the psychological underpinnings of Deci and Ryan's (2004) self-determination theory and Perry and Hongdegem's (2008) public service motivation theory are supported. Also, the evidence shows that while the presence of the altruistic/PSM paradigm is more dominant, there is also evidence (albeit weaker) of the behavioristic/economic paradigm predicted by expectancy theory and behaviorism.

The evidence presented in this study also shows that while the behavioristic/economic paradigm is the weaker of the two paradigms, it does appear to have the ability to draw the attention of the educators to those measures to which a financial incentive is attached.

Conclusions

The purpose of this study was to investigate the influence of the behavioristic/economic and altruistic/PSM

paradigms in educator motivation in the context of a performance-based compensation system. The study used data from a survey of teachers in Eagle County schools in Colorado, a district with arguably the longest and most aggressive history of using performance-based compensation in the United States.

The study suggests that both paradigms are at work in motivating teachers and that it is possible for the paradigms to coexist. Comparing the relative influence of the two, the altruistic/PSM paradigm appears to have a stronger effect than the behavioristic/economic paradigm. However, the behavioristic/economic paradigm does appear to have the ability to draw the attention of educators to those measures to which an incentive is attached.

A few weeks before the completion of the writing in this study, economist Roland Fryer (2011) published a working paper from the National Bureau of Economic Research that presented his findings in a study of a cash-for-test-scores performance pay plan piloted in New York City public schools. The results showed a negligible effect on a number of student performance outcomes measured in the study, including measures of student achievement. This study falls quickly on the heels of the Vanderbilt POINT

experiment (Springer et al., 2010) which showed a similar lack of results.

Fryer's results and the results of the POINT experiment fairly clearly show that cash-for-test-scores schemes do not seem to be effective in raising student achievement beyond the traditional step and lane approach. This study suggests possible reasons why. Simple cash-for-test-scores schemes rely on a purely behavioristic/economic paradigm when in reality teachers are more strongly motivated for altruistic and public service reasons. As Herzberg (1959) predicted, the results of this study suggest that while financial incentives have an important place in establishing employee satisfaction, they play a limited role in motivation. This appears especially so among teachers.

Simplistic performance pay models such as those tested in Fryer's study and the POINT study rely on a basic psychological mechanism that would have us believe that when presented with the right set of incentives, teachers will have nearly a purely behavioral response in pursuit of the money and alter teaching practices and levels of effort to reach those incentives and student achievement will rise as a consequence. The fact that teachers are more strongly motivated to help others and to be connected to a larger

and important public service effort clouds ability of simple cash-for-test-scores approaches to drive student achievement.

While this study answers, in part, why simplistic performance pay systems may fail in altering teacher behavior and ultimately changing student learning, it is important to note that this study did note that educators are attracted and pay attention to financial incentives. One need look no further than the number of educators who pursue advanced degree credits to gain a lane change on the traditional pay system for more evidence that teachers respond to financial incentives. Policy makers, practitioners, and researchers would all be best served to continue experimentation with performance based compensation systems, rather than accept that experience and education credits are the only way to compensate teachers. However, the design, implementation, and study of these new compensation models should take into account teacher motivation as a key element for consideration.

Policy Recommendations

1. Avoid mandating simple cash-for-test-scores models of performance pay.
2. Support the creation of compensation models that assume teachers are motivated by both altruistic/PSM reasons and

behavioristic/economic reasons and take into account Herzberg's (1959)two factor model in design.

3. Support further experimentation with performance pay models and how the altruistic/PSM and behavioristic/economic paradigms may affect the responses to these experiments.
4. Provide supports to educators around those things to which compensation is attached, so that the attention of educators can be used as a tool that is linked to improvement.
5. Support the design of compensation systems that build on the potential synergy of the behavioristic/economic and the altruistic/PSM paradigms.

Practice Recommendations

1. Use the underlying altruistic/PSM motivations in teachers as the primary mechanism by which to drive improvement in practice and ultimately better outcomes for students.
2. Design sophisticated compensation systems that move beyond the traditional step and lane models but also beyond simple cash-for-test-scores approaches.
3. Motivate teachers by connecting their work to the moral purpose and social significance of education, while incentivizing those outcomes and measures most closely associated with student achievement.

4. Provide significant supports that drive improvement alongside those measures used in a performance pay model.
5. Pay significant attention to making sure that those measures to which compensation is attached are valid and reliable and are clearly linked to quality outcomes for students.
6. Design systems with the understanding that teachers will be most attentive to those measures that are individually attached to each teacher.

Future Research Recommendations

1. Design sophisticated and scientifically sound (valid and reliable) measures of motivation and examine how educators respond to financial incentives and altruistic/public service motivators.
2. Study the diversity of compensation approaches that exist beyond purely performance pay or purely the traditional step and lane approach.
3. Design studies to measure possible synergistic or additive effects that may emerge as more comprehensive compensation and support mechanisms appear.
4. Investigate holistic human capital systems that consider compensation as one element in a larger system of improving the human resources in an organization along

with recruitment, hiring, induction, ongoing supports, professional development, and selective retention.

5. Observe and study if specific behavior changes occur as the result of financial incentives and determine if these behavior changes are theoretically or empirically linked to student achievement.
6. Conduct a qualitative study relating to why altruistic/PSM motivators are more prevalent in educators. This study should include investigating issues such as the calling of the profession and the reasons individuals become teachers.

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APPENDIX

ECS SURVEY QUESTIONS

KEY

- ▪ = a question prompt.
- • = a response option.
- ➢ = a question stemming from a prompt.

- ▪ In what school do you teach the majority of the time?
  - • Red Table Early Learning Center
  - • Red Sandstone Elementary
  - • Meadow Mountain Elementary
  - • Avon Elementary
  - • Edwards Elementary
  - • June Creek Elementary
  - • Eagle Valley Elementary
  - • Brush Creek Elementary
  - • Gypsum Elementary
  - • Red Hill Elementary
  - • Minturn Middle School
  - • Berry Creek Middle School
  - • Eagle Valley Middle School
  - • Gypsum Creek Middle School
  - • Battle Mountain High School

- Eagle Valley High School
- Red Canyon High School
- Vail Ski & Snowboard Academy

- In what role do you teach?
  - Career Teacher
  - Mentor Teacher
  - Master Teacher
  - Specialist

- What grade level best fits who you teach?
  - Early Childhood
  - Elementary
  - Middle School
  - High School
  - Multiple Grades

- Including this school year and adding up part time years, how many years have you taught on a full-time basis? In Eagle County Schools? In Your Total Teaching Career?
  - 1 Year or Less
  - 2 to 3 Years

- 4 to 5 Years
- 6 to 8 Years
- 9 to 12 Years
- 13 to 16 Years
- 17 to 20 Years
- 21 to 25 Years
- 26 Years or More

- What is your highest degree earned?
  - Bachelor's Degree
  - Master's Degree
  - Doctorate or Professional Degree

- What is your gender?
  - Female
  - Male

- What is your race or ethnicity?
  - White/Caucasian
  - Hispanic/Latino
  - Black/African American
  - Asian/Pacific Islander

- Other
- None of these apply/Don't want to answer

- To what extent do you agree with the following statements?
  - Strongly Agree
  - Agree
  - Disagree
  - Strongly Disagree
  - Don't Know

  - I understand how performance pay works at ECS.
  - I believe that the method for determining pay is fair.
  - I can earn more on performance pay than on a regular pay system.
  - I believe that the district is committed to making the performance pay system better.
  - I feel I am adequately compensated for what I do as a teacher.
  - I seek out more professional development because of performance pay.
  - I work harder because of performance pay.

- I am more reflective because of performance pay.
- I have a strong desire to earn a raise or bonus.
- There is enough money offered to motivate me.
- Performance pay increases collaboration between teachers.
- Performance pay increases competition between teachers.
- Teachers in high poverty schools should be paid more.
- Teachers in shortage areas (like math, special education) should be paid more.
- I would prefer the traditional step and level pay system.
- Performance pay makes teachers at ECS less willing to teach low income or minority students.
- I feel I am better rewarded financially because of performance pay.
- I generally support the performance pay system at ECS.

- Has the opportunity to receive additional financial rewards or bonuses for effective performance changed

the way you view your job or your teaching practices? Please rate the level of impact in each area.

- Strong Impact
- Moderate Impact
- Little Impact
- No Impact
- Don't Know

- I am being appreciated more for the work that I do.
- I can earn more on performance pay than on a regular pay system.
- I feel my job is more rewarding. I am happier with my teaching experience.
- I am more enthusiastic about teaching.
- I am more focused on improving my teaching.
- I am more focused on student achievement gains.
- I spend more time in professional development activities.
- I spend more time providing supplemental services or tutoring to students.
- I spend more time aligning my instruction to standards and the evaluation rubric.

- I more often rely on student performance data in lesson planning and individualizing instruction.
- I am more self-reflective about my teaching practices.
- I am more focused on my evaluation.
- I am less likely to leave the teaching profession because of performance pay.

- How has the performance pay system at Eagle County Schools affected how long you plan on teaching?
  - I will stay with ECS longer.
  - It makes no difference.
  - I will leave ECS for another district earlier.
  - I will retire earlier than originally planned.
  - Don't Know

- Have you submitted an application for the Excellence in Teaching Award (ETA) this year or last year?
  - Yes, I completed at least one entire application process.
  - I started the application process, but did not complete one.
  - No, I have never started an application process this year or last.
  - Don't Know

- To what extent are you familiar with the "Professional Practices for Licensed Staff" rubric used in evaluation?
  - Very Familiar
  - Somewhat Familiar

- Not at all Familiar
- Don't Know

- Based on what you know about the teacher evaluation system, to what extent do you agree or disagree with the following statements?
  - Strongly Agree
  - Agree
  - Disagree
  - Strongly Disagree
  - Don't Know

  - My master teacher can fairly and accurately evaluate my performance.
  - My mentor teacher can fairly and accurately evaluate my performance.
  - My principal can fairly and accurately evaluate my performance.
  - I generally support paying raises to teachers based on evaluations.
  - ECS' evaluation system is more comprehensive than other districts' evaluations.

- I believe the ECS Professional Practices rubric reflects good teaching practices.
- Quality teacher evaluation processes can improve instruction.
- I use my teacher evaluation results and feedback to improve my teaching.
- My evaluation is important because my pay is attached to it.
- My evaluation is important because it helps me be a better teacher for my students.
- More attention is paid to evaluations because of performance pay.

- Based on what you know about the role of test data, to what extent do you agree with the following statements?
  - Strongly Agree
  - Agree
  - Disagree
  - Strongly Disagree
  - Don't Know

- I understand how school-wide achievement is measured for the performance pay system.
- I understand how district-wide achievement is measured for the performance pay system.
- I generally support paying a bonus to teachers based on test scores.
- Quality student assessments can improve instruction.
- I believe teachers have considerable impact on student achievement.
- Student assessment results are important because pay is attached to them.
- Student assessments are important because they help in guiding instruction for my students.
- More attention is paid to student assessments because of performance pay.

- To what extent are you satisfied with the following aspects of your job?
  - Very Satisfied
  - Somewhat Satisfied
  - Somewhat Dissatisfied
  - Very Dissatisfied
  - Don't Know

- Quality of my colleagues
- My base salary (for teaching in Colorado)
- My annual bonuses
- The quality of my Principal
- The quality of my ILT (Mentors and Masters)
- The overall quality of instruction at my school
- The quality of professional development you receive before the year starts
- The quality of professional development you receive during the school year
- Cluster Time
- My ability to influence decision-making
- Communication from my school administration
- Communication from the district administration

- To what extent do you agree with the following statements?
  - Strongly Agree
  - Agree
  - Disagree
  - Strongly Disagree
  - Don't Know

- I feel support from teachers at my grade level.
- There is a "team" feeling at my school.
- I am becoming a better teacher because of the support and collaboration at my school.
- My input is valued at my school.
- It is very difficult for teachers to engage students that live in a poor home environment.
- If a student does not remember information I gave in a previous lesson, I know how to increase his/her retention in the next lesson.
- If I really try hard, I can get through to even the most difficult or unmotivated students.
- Teachers at my school trust each other.
- Teachers are willing to question one another's views on issues of teaching and learning.
- Teachers are expected to continually learn and seek out new ideas.
- Teachers are encouraged to take risks in order to improve their teaching.
- Teachers typically go beyond their classroom teaching to address the needs of students.
- Teachers do a good job talking through different views, opinions, and values.

- The principal at my school promotes collaborative problem solving and open communication.
- The principal at my school creates a school culture and climate based on high expectations for student achievement.
- A major motivator for me is helping others.
- A major motivator for me is earning more money.

- What is your primary reason for being a teacher?
  - Open Response

- What effect, if any, has working in a performance pay district had on your teaching?
  - Open Response

- On the last evaluation, in what category were you ranked as a teacher?
  - Exceptional
  - High Performing
  - Professional - Commendable
  - Professional - Meets Expectations
  - Needs Improvement
  - Unacceptable

- Don't Know/Not Applicable

- Are there any other opinions, comments, or suggestions for improvement to ECS' performance pay program that were not covered in your survey responses that you would like to share with us? If so, please use the space below.
    - Open Response