TEACHERS' JOB SATISFACTION AND LONELINESS IN BRAZIL: TESTING INTEGRATIVE MODELS

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By

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SAINT MARY'S COLLEGE OF CALIFORNIA

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Abstract

While low job satisfaction is a reality among Brazilian teachers, studies on this topic have focused almost exclusively on environmental factors such as salary as predictors of job satisfaction. No studies have combined environmental and personal factors to explain job satisfaction among Brazilian teachers. This study aimed to identify the demographic and professional characteristics of Brazilian teachers that are associated with teachers' job satisfaction and its predictors. This study also tested two models comprised of environmental and personal predictors of teachers' job satisfaction. Participants were 1,194 Brazilian teachers (830 women, 351 men, 13 non-identified) working in public (n = 906, 75.9%) or private schools (n = 153, 12.8%) or both (n = 129, 10.8%). The grade levels taught were kindergarten (n = 137, 11.5%), fundamental (n = 373, 31.2%), high school (n = 239, 20%), or more than one level (n = 433, 36.3%). Using a snowball sampling strategy, participants answered an online survey questionnaire. A series of t-tests, ANOVAs, and correlational analyses were performed to identity the demographic and professional characteristics associated with teachers' job satisfaction and its predictors. The type of college attended, the type of school in which teachers work, geographical region and grade level taught were associated with teachers' job satisfaction. Path analysis was used to determine the best fit for the hypothesized models. Loneliness was not found to be a direct or indirect predictor of teachers' job satisfaction. Positive affect, goal progress, and teachers' self-efficacy were respectively the strongest predictors of teachers' job satisfaction. Work conditions and goal progress mediated the effect of goal support in predicting teachers' job satisfaction. Future research is required to identify other factors that may predict teachers' job satisfaction among Brazilian teachers.

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Chapter I

Introduction

With a population of over 190 million inhabitants, Brazil has experienced financial growth and stability in the last decade (Instituto Brasileiro de Geografia e Estatísticas [IBGE], 2010). The successful combination of economic growth and social development made Brazil the sixth largest economy in 2011 (Antunes, 2011). However, when it comes to education Brazil has not yet done its homework. Brazil occupied the 88th position in the educational ranking according to UNESCO (2011). Part of the problem with the Brazilian educational system has to do with teachers. Prospective teachers from kindergarten to high school—the so-called basic education—come from low socioeconomic backgrounds and have poor performance in national exams (Louzano, Rocha, Moriconi & Oliveira, 2010).

In addition to the generalized poor educational background, over 30% of Brazilian teachers report job dissatisfaction (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira [INEP], 2006). Job satisfaction is defined as "the extent to which people like their jobs" (Spector, 2008, p. 223). Low job satisfaction is a major problem among teachers because it leads to absenteeism, and ultimately to turnover, impacting students' performance (Ingersoll, 2001; Sargent & Hannum, 2005; Wriqi, 2008).

Research on job satisfaction in Brazil has focused mostly on environmental factors such as low salary, bureaucracy, and poor work conditions. Personal factors such as personality traits and emotional states have been overlooked (Folle, Borges, Coqueiro & Nascimento, 2008; Penin, 1985). In the larger field of studies on job satisfaction, integrative models that combine personal and environmental factors have attempted to overcome the dichotomy between these two theoretical approaches. Lent and Brown's (2006) model of job satisfaction, for example, posits

that job satisfaction can be directly predicted by five factors (positive affect, work conditions, self-efficacy, goal support and goal progress), and by the interplay of these factors.

Despite the large scope of the set of predictors identified by Lent and Brown's (2006) model, this model does not include other individual factors such as depression, impulsivity and loneliness. A point of interest of this study is the extent to which loneliness can predict job satisfaction. Loneliness refers to the subjective experience of perceived discrepancy between the desired and the actual quality of a person's relationships. Loneliness has been shown to impact negatively the way people feel, as well as their perceptions about themselves, others, and the environment (Cacioppo & Hawkley, 2009; Cacioppo & Patrick, 2008). Individuals with higher levels of loneliness have reported lower life satisfaction (Cacioppo & Hawkley, 2009), and lower self-efficacy, a main factor in Lent and Brown's model (Dussault & Deaudelin, 2001; Neto & Barros, 1992), and therefore may be a predictor of job satisfaction.

Using Lent and Brown's (2006) model as a basis, the present study aimed primarily to assess the extent to which a combination of personal and environmental factors, specifically including teachers' levels of loneliness, predicts job satisfaction, directly and/or indirectly, among Brazilian teachers. In achieving this goal, this study contributed to the general body of research on job satisfaction, as well as to the field of studies on loneliness. Equally important is the fact that this study built a body of evidence that may inform effective interventions by Brazilian policy-makers and educational leaders, and the creation of innovative programs of teachers' training that take into consideration their emotional well being along with their professional education.

Chapter 1, divided into several sections, offers the context and the parameters for this study. The first section of this chapter presents how loneliness might be related to job

satisfaction. The second section points to the gap in literature regarding the exploration of the impact of loneliness on job satisfaction. Next, the purpose of this study is presented. It is followed by the research questions and a summary of methods. The subsequent section shows the contribution that this study intended to offer to the existing literature on loneliness and to teachers' practice and education in Brazil. The chapter continues with the presentation of the theoretical framework, limitations, delimitations and the definition of the key terms used in this study. Chapter 1 ends with a brief summary, which not only synthesizes the content of the chapter, but also introduces the issues that will be explored in Chapter 2.

Background

Work conditions and individual factors are the two major constructs around which models have been created to explain job satisfaction (Spector, 1997). Some models try to explain job satisfaction by focusing exclusively on work conditions, while others consider individual factors as the sole set player in determining job satisfaction. In an attempt to integrate concurrent explanations for job satisfaction, Lent and Brown (2006) developed an integrative social cognitive model, which includes five predictors of job satisfaction: positive affect, work conditions, self-efficacy, goal support and goal progress. According to Lent and Brown, these factors can predict job satisfaction both directly and indirectly, suggesting that each factor mediates the others in predicting job satisfaction. This model has been tested with teachers, and the results support most of the claims made by Lent and Brown. Positive affect and work conditions have repeatedly been found as predictors of job satisfaction (Badri, Mohaidat, Ferrandino, & Mourad, 2013; Duffy & Lent, 2009; Lent et al., 2011).

The perception of the environment, including work conditions, can be influenced by emotional states such as loneliness. Individuals who feel lonely tend to develop hypersensitivity

to negative social information, to rate their social interactions more negatively, to fear negative evaluation, to engage in more defensive behaviors, to avoid rejection, and to form negative impressions of others (Cacioppo & Hawkley, 2009; Cacioppo, Hawkley, et al., 2006).

Loneliness has emotional, cognitive and behavioral consequences that affect more than a person's ability to evaluate their environment and social interactions. Loneliness has been defined as a risk factor for morbidity and mortality (Nummela, Seppanen, & Uutela, 2011; Penninx et al., 1997, Seeman, 2000). For instance, a long range of negative consequences of loneliness, including stress, poor sleep quality, alcoholism, and reduced physical activity, have been shown to be detrimental to health and general well-being (Akerlind & Hornquist, 1992; Hawkley, Thisted & Cacioppo, 2009; Segrin & Domschke, 2011; Segrin & Passalacqua, 2010). This set of negative consequences does not take place in a vacuum. Lonely individuals are affected in many areas of their lives, including the exercise of their profession.

The combination of the impairment of social cognition and self-regulation seems to impact professional activities in at least three ways. First, the impairment of social cognition and self-regulation has emotional impacts. This emotional impact is illustrated by the simple fact that loneliness is a risk factor for depression across a life span, and loneliness is a stronger predictor of depression in a given year than symptoms of depression in the previous year (Cacioppo, Hawkley & Thisted, 2010). Second, the distorted perception created by loneliness is also very likely to affect how professionals perceive their work conditions. It seems logical to assume that, for a person who reports a high level of loneliness, no higher salary or better leadership style, for example, will be satisfactory. Finally, the distorted social cognition that is experienced by individuals with higher levels of loneliness can lead to negative self-evaluation. For example, teachers with a higher level of loneliness negatively evaluate not only their own

social abilities, but also their ability to successfully engage in their professional practice, resulting in low self-efficacy (Neto & Barros, 1992).

While loneliness seems to affect three of the five predictors of job satisfaction—positive affect, work conditions, and self-efficacy—there appeared to be no studies that take into consideration the impact of loneliness on job satisfaction. Similarly, the past studies on teachers' job satisfaction in Brazil have focused mostly on the environmental factors, leaving a gap in the literature with regard to the impact of individual factors such as loneliness on job satisfaction.

Problem

Despite the reported low job satisfaction among Brazilian teachers, there seemed to be no study taking into consideration a theoretical model that would integrate personal factors such as positive affect, self-efficacy, and loneliness with environmental factors such as work conditions, goal support and goal progress to predict job satisfaction.

Purpose

The purpose of this study was two-fold. Given the gap in the literature, the first goal was to identify the characteristics of Brazilian teachers that appear associated with teachers' job satisfaction, teachers' self-efficacy, goal progress, goal support, work conditions, positive affect and loneliness. The second goal was to test the overall fit of the teachers' job satisfaction models proposed in this study. The first model assumes that loneliness predicts teachers' job satisfaction directly and indirectly through positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions. The alternative model postulates that these factors predict teachers' job satisfaction directly and indirectly through loneliness. Job satisfaction was defined as "the extent to which people like their jobs" (Spector, 2008, p. 223), and loneliness, as assessed by the Revised UCLA Scale, was broadly understood as the subjective experience of perceived

discrepancy between the desired and the actual quality of a person's relationships (Cacioppo & Patrick, 2008; Margalit, 2010; Masi, Chen, Hawkley & Cacioppo, 2011).

Research Questions

These were the questions answered by this research:

1. Which demographic and professional characteristics of Brazilian teachers are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness?

2. To what extent does loneliness predict teachers' job satisfaction directly and indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy?

3. To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness?

Summary of Methods

In assessing the extent to which loneliness predicts job satisfaction directly and/or indirectly, this correlational study drew from the post-positivist epistemology, which aims to explain and predict reality though the identification of relationships among variables, and whenever possible to reveal cause and effect (Guba & Lincoln, 2008). Participants in this study were Brazilian teachers who were teaching any grade from kindergarten through high school in Brazil. A convenience sample of teachers from each of the five Brazilian geographical regions responded to an online survey and was invited to pass the survey website address on to other teachers they know.

In addition to questions that covered demographic characteristics—gender, age, income and relationship status—participants also answered the Portuguese version of the Revised UCLA

Loneliness Scale (Neto, 1989; Russel, Peplau & Cutrona 1980), the Positive Affect items of the Positive and Negative Affect Scale (Watson, Clark & Tellegen, 1988), the Perceived Organizational Support Scale-Short Form (Eisenberger, Huntington, Hutchison & Sowa, 1986), the Work-Related Goal Progress Scale (Duffy & Lent, 2009; Lent et al., 2005), the Work-Related Goal Support Scale (Brunstein, Dangelmayer, & Schultheiss, 1996; Duffy & Lent, 2009), and the Teacher's Self-Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001), which assesses teachers' beliefs about their ability to perform three main aspects of teachers practice: instructional strategy, student engagement, and classroom management (Klassen, Bong, et al., 2009). Participants also answered a 4-item scale regarding job satisfaction as developed by Skaalvik and Skaalvik (2011). Data were collected in June and July of 2013.

For data analysis, research question 1 was answered though the analysis of frequency, analyses of variance (ANOVA), t-test and Pearson Product-Moment Correlation. Path analysis was conducted to answer research questions 2 and 3.

Significance

From a theoretical perspective, this investigation was important because it contributed to the field of study on job satisfaction as it assessed the extent to which loneliness can predict job satisfaction directly and/or indirectly. On the one hand this study supported the integrative model proposed by Lent and Brown (2006); on the other hand, this study expanded it through the possible inclusion of loneliness as a predictor of job satisfaction. This study also amplified the body of knowledge in the research field of loneliness in the context of a population defined by its profession and also in the context of Brazil, a country in which there is little research on the topic.

From a practical point of view, identifying the characteristics of teachers' professional practice in Brazil that are associated with job satisfaction and loneliness is of special relevance because it may lead to the development of effective interventions. Brazilian policy-makers and educational leaders can use the findings of this research to enhance the life quality of those teachers who experience negative situations that come from low job satisfaction and high levels of loneliness. Educational leaders can also benefit from this study, since some of the variables explored in it, such as job satisfaction, self-efficacy, and work conditions, have been historically associated with leadership style. The results of this study also may inspire leaders with ways to improve the job satisfaction of their employees as those leaders become more supportive and enabling.

Theoretical Framework

The theoretical framework for this study was drawn from two theories. The first is the social cognitive theory, developed by Bandura (1986). The most basic concept of this theory is agency, which means the ability that individuals have to exercise control over their own lives (Bandura, 2001). Also, according to this theory, self-efficacy beliefs play an important role in human achievement (Bandura, 1997). Social cognitive theory attempts to explain human functioning by looking at the reciprocal influence between behavior, environmental and personal factors (Bandura, 1986). Lent and Brown (2006) employed this principle when developing the model of teachers' job satisfaction that serves as the basis of this study. In doing so, they attempted to integrate environmental and personal factors and to highlight the importance of the interplay between the predictors of teachers' job satisfaction.

The second was the theory that presents loneliness as a unidimensional construct, generated from the interplay of three structural elements: a genetically inherited sensitivity to

social disconnection, the ability to self-regulate, and social cognition (Caccioppo & Patrick, 2008). According to this theory, loneliness is a risk factor for morbidity and mortality through the increase of stress (Adam, Hawkley, Kudielka & Cacioppo, 2006), poor sleep quality (Hawkley, Preacher & Cacioppo, 2010), and other detrimental factors.

Delimitations

Principals, vice principals and staff have an important role in creating the context of school sites. However, for the purposes of this study, because the high percentage of job dissatisfaction among Brazilian teachers leads to turnover and impacts students' performance, participants were limited to Brazilian teachers older than 18, teaching in any grade from kindergarten through high school.

Definition of Terms

Goal Progress: Refers to the ability to create work-related goals and make progress toward them.

Goal Support: The extent to which individuals are presented with support or obstacles regarding their work goals.

Loneliness: The subjective experience of perceived discrepancy between the desired and the actual quality of a person's relationships.

Positive affect: Refers to "an individual's tendency to experience a positive state of emotion" (Duffy & Lent, 2009, p. 213).

Teachers' job satisfaction: Can be defined as "teachers' affective reactions to their work or to their teaching role" (Skaalvik & Skaalvik, 2011, p. 1030).

Teachers' self-efficacy: The belief that teachers hold about their own capacity to successfully plan and follow through on their professional activities.

Work conditions: A variety of work characteristics and outcomes that may impact individuals.

Summary

In summary, despite the efforts to develop integrative models to explain job satisfaction, such models have not been tested among Brazilian teachers. In an effort to open an area of research on the relationship between job satisfaction and loneliness, this study aimed to identify the characteristics of Brazilian teachers that appear associated with teachers' job satisfaction, teachers' self-efficacy, goal progress, goal support, work conditions, positive affect, and loneliness. This study also aimed to test the overall fit of the teachers' job satisfaction models proposed in this study. The first model assumes that loneliness predicts teachers' job satisfaction directly and indirectly through positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions. The alternative model postulates that positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions predict teachers' job satisfaction directly and indirectly through loneliness. This chapter presented background information, the problem and the purpose, and introduced the research questions. Theoretical framework, limitations, delimitations, and definition of terms were also provided in this chapter. Chapter 2 offers a review of recent literature on job satisfaction, defines loneliness, and shows its impact on individuals according to their age groups and on the general population. Chapter 2 also provides the context for this study as it describes the situation of Brazilian teachers.

Chapter II

Literature Review

Low job satisfaction has been a constant problem among Brazilian teachers. In São Paulo, Brazil's largest state, the turnover of elementary and high school teachers in public schools increased 300% between 1990 and 1995 (Lapo & Bueno, 2003). When asked about the reasons for dissatisfaction which ultimately motivated them to leave their jobs, these teachers indicated low salary, poor working conditions, poor leadership, and devaluation of teachers (Folle et al., 2008; Lapo & Bueno, 2003; Penin, 1985).

To shed light on this important topic, this study aimed to identify the characteristics of Brazilian teachers that are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness. Using components of the integrative model of job satisfaction developed by Lent and Brown (2006), this study aimed to test the overall fit of the data to two teachers' job satisfaction models. The first model assumes that loneliness predicts teachers' job satisfaction directly and indirectly through positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions. The alternative model postulates that positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions predict teachers' job satisfaction directly and indirectly through loneliness.

The following research questions were addressed in this study:

1. Which demographic and professional characteristics of Brazilian teachers are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness?

2. To what extent does loneliness predict teachers' job satisfaction directly and indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy?

3. To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness?

Sources, Searches

The databases PsychInfo, ERIC, JSTOR, PROQUEST, SCIELO and Google Scholar were used to locate peer-reviewed articles, books, and dissertations. The following descriptors were used in the searches on these databases: teacher AND job satisfaction, job satisfaction AND work conditions, job satisfaction AND leadership, job satisfaction AND positive affect, job satisfaction AND self-efficacy, work conditions AND meta-analysis, loneliness, loneliness AND self-efficacy, *professores* AND *satisfação no trabalho, mulheres* AND *docência, gênero* AND *docência*. Empirical studies were predominantly limited to the last 10 years. However, seminal studies in job satisfaction and loneliness were included to provide the research background in both topics.

This review of the literature begins with the theoretical framework that guides this study. Next, an overview of several empirical studies on job satisfaction and the presentation of the research on loneliness are presented. This is followed by the relevant demographic characteristics of Brazilian teachers. This chapter ends with a summary of the themes of the literature review.

Theoretical Framework

The theoretical framework that informs this study is based on the social cognitive theory developed by Bandura (1986). A basic tenet of the social cognitive theory is the ability that

individuals have to exercise control over their own lives. This ability is called agency (Bandura, 2001). According to the social cognitive theory, human functioning is a product of the reciprocal relationship between three elements: behavior, environmental factors, and personal factors, including cognition, affection, and biological events (Bandura, 1986). In this sense, Bandura (1986) affirms, "[w]hat people think, believe, and feel affects how they behave. The natural and extrinsic effects of their actions, in turn, partly determine their thought patterns and affective reactions" (p. 25).

The variables assessed in this research include the "three major classes of determinants" (Bandura, 1997, p. 6) of human agency, namely behavioral, environmental and personal factors as they relate to job satisfaction. The connection between this study and the social cognitive theory is established through the research on loneliness and also through the variables that comprise the model used in this study to predict job satisfaction.

The experience of loneliness, as understood in this study, encompasses the elements listed by Bandura (1997) as personal factors: affect, biology, and cognition. It is also in the realm of personal factors that two central features of the social cognitive theory intersect with the research on loneliness. Self-regulation and self-efficacy are these two central features of Bandura's (1986) theory. Self-regulation is the "ability to exert control over one's own inner states, processes and responses" (Baumeister, Heatherton & Tice, 1994, p. 6). Self-regulation also includes the ability to control thoughts and actions in order to achieve a goal. In the context of this study, self-regulation is also one of the structural elements of loneliness. Individuals who experience higher levels of loneliness become unable to self-regulate (Cacioppo & Patrick, 2008). Unable to exercise control over their own thoughts, lonely individuals formulate distorted cognitions that negatively affect the way they evaluate social situations, others, and themselves,

which leads them to feel increased loneliness in a downward spiral (Cacioppo & Hawkley, 2009; Cacioppo & Patrick, 2008). As Bandura (1986) suggested, thoughts can regulate actions, which ultimately will exert some influence on thought patterns and emotional responses.

The other central feature of social cognitive theory is self-efficacy, which is defined by Bandura (1986) as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Among the sources of information that individuals interpret to form their self-efficacy beliefs are social persuasions and affective states (1997). Social persuasions refer to the feedback received from others. Realistic verbal persuasions from people who are significant in one's life help individuals to develop a better sense of self-efficacy (Bandura, 1997). Similarly, individuals also derive their sense of self-efficacy from emotional states. Those who often experience stress, depressed mood, and anxiety, for example, will be challenged to develop confidence or positive beliefs about themselves (Bandura, 1997). Once again, in the context of this study, the social cognitive theory of Bandura (1986) connects with the findings of an extended body of research on loneliness. Those who experience loneliness are less likely to report a greater sense of self-efficacy (Dussault & Deaudelin, 2001; Neto & Barros, 1992). People with a higher level of loneliness and lower self-efficacy will be more likely to dwell on the negative aspects of life in general, to have poor coping skills, and be more prone to stress and depression (Bandura, 1997; Cacioppo & Patrick, 2008).

In addition to the connections established between the social cognitive theory and loneliness, Bandura's (1986) theory also informs the integrative model used to explain job satisfaction in this study. Lent and Brown (2006) drew basic tenets of their job satisfaction model from the theory. First of all, they advocated for ending the dichotomy between individual

and environmental factors that exists in the studies on job satisfaction. For Lent and Brown, the interplay of the five predictors that include individual and environmental elements is what predicts job satisfaction, which is very similar to the integrative approach used by Bandura (1986) to elucidate human functioning (behavior, environmental factors, and personal factors).

Among the predictors of job satisfaction Lent and Brown (2006) include self-efficacy, work conditions, and positive affect. They also include two other predictors that are directly related to core ideas of the social cognitive theory: goal support and goal progress. In fact, the human activity of setting goals serves as a foundation to the development of the social cognitive theory. Self-regulation, for example, is not purposeless. When individuals exercise control over their actions, thoughts and feelings, they do so to achieve a goal. It is through the establishment of goals that one's progress in self-regulation can be measured. Lent, Brown and Hackett (1994) explain, "by setting goals, people help to organize and guide their behavior, to sustain it over long periods of time even in the absence of external reinforcement, and to increase the likelihood that desired outcomes will be attained" (p. 84). Figure 1 shows the interactions between loneliness and the selected elements of Lent and Brown's (2006) model that were assessed in this study.

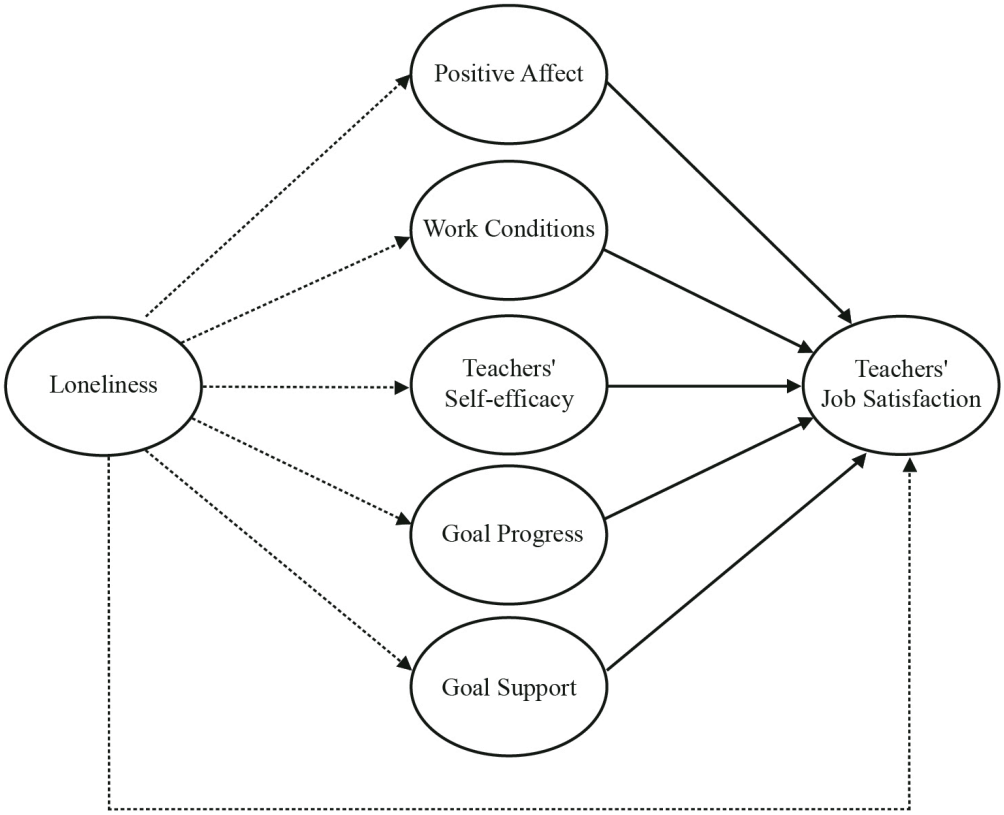

Figure 1. Teachers' Job Satisfaction Model to be tested.

In the model presented above, loneliness is presented as the direct and indirect predictor of teachers' job satisfaction. However, it is important to keep in mind that according to the social cognitive theory, human functioning depends not only on behavior and personal factors, but also on environmental factors (Bandura, 1986). There is a reciprocal influence between these factors that inform human functioning. To be faithful to the principle of the theory that informs this study, it is also necessary to look at the relationship between the elements that comprise the model from a different perspective. From a theoretical standpoint, environmental factors such as goal support and work conditions are also likely to predict loneliness. For example, if teachers do not feel supported in the pursuit of their work-related goals by the administration, it is

possible that these teachers will feel socially isolated and even lonely. Similarly, the other personal factors present in the model may also predict loneliness. Take for example, self-efficacy. Research has established a connection between loneliness and self-efficacy (Dussault & Deaudelin, 2001; Neto & Barros, 1992). If the tenet of the social cognitive theory of reciprocal influence holds true, this influence is likely to be bidirectional; high levels of loneliness predicting low self-efficacy, and low self-efficacy predicting loneliness. This is why an alternative model that positive affect, work conditions, teachers' self-efficacy, goal progress and goal support as predictors of loneliness was also necessary. Figure 2 shows the alternative model tested in this study.

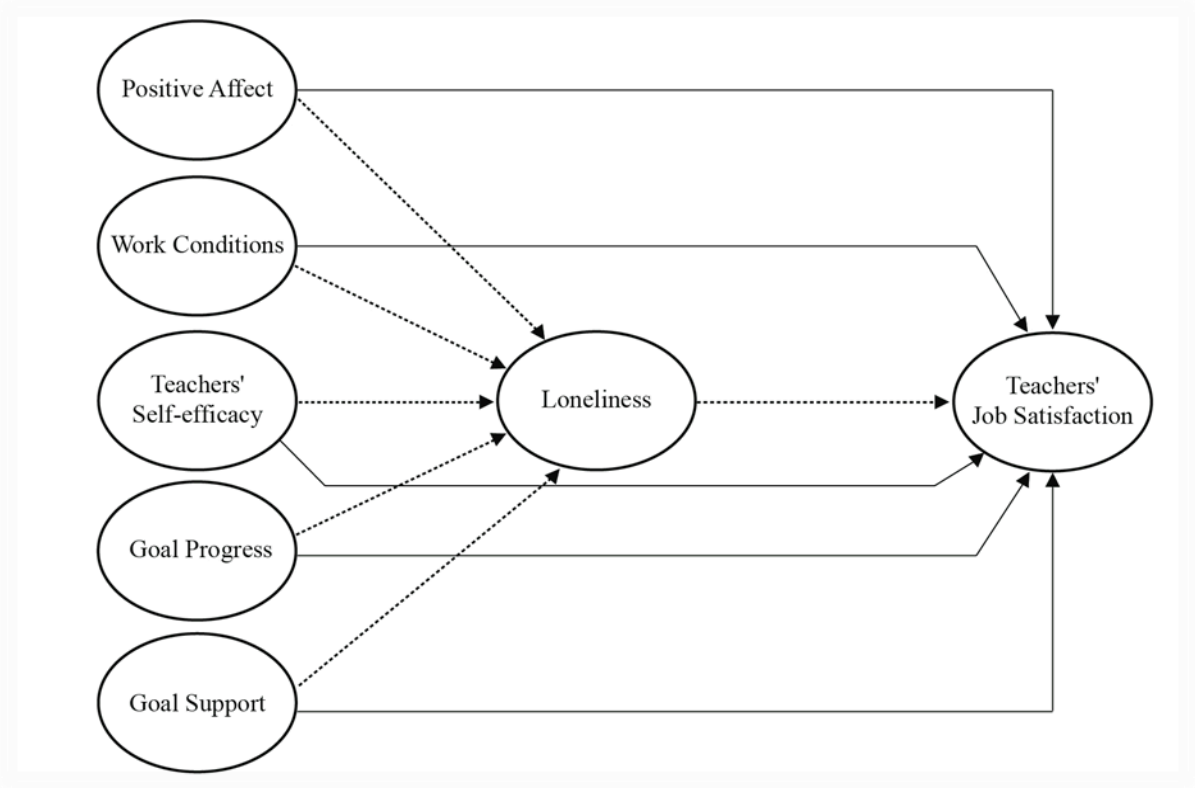

Figure 2. Alternative Teachers' Job Satisfaction Model to be tested.

In this section the framework that informed this study was presented. The following section summarizes important aspects of the research on job satisfaction, with a special focus on the integrative model developed by Lent and Brown (2006).

Job Satisfaction

Job satisfaction has slightly different definitions, most of them emphasizing the affective response to work (Brief, 1998). For example, Locke (1976) defines job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (p. 1300). Spector (2008), however, offers a very simple definition. For him job satisfaction is "the extent to which people like their jobs" (Spector, 2008, p. 223). When applied to teaching, job satisfaction can be defined as "teachers' affective reactions to their work or to their teaching role" (Skaalvik & Skaalvik, 2011, p. 1030). The goal of this section is to discuss the negative impacts of low job satisfaction, especially addressing teachers' attrition and stress, and to present some of the many models that explain job satisfaction. Special attention is given to Lent and Brown's (2006) model of job satisfaction, which provides the basis for this research. In addition to this, the connection between job satisfaction and leadership is also presented. This section ends with a summary of the main ideas that will be discussed in the following pages.

Job Satisfaction: Attrition and Stress

Job satisfaction has been considered an important element in understanding teachers' attrition and absenteeism (Perrachione, Petersen & Rosser, 2008; Sargent & Hannum, 2005). In a study conducted with 2,569 Norwegian teachers in elementary and middle schools, Skaalvik and Skaalvik (2011) found that low job satisfaction, along with emotional exhaustion, predicted motivation to leave the profession. This finding is especially important because many countries,

including the United States, are facing problems regarding recruitment and retention of qualified teachers (Rhodes, Nevill & Allan, 2004; Tillman & Tillman, 2008).

Ingersoll (2001) shows in numbers how serious the problem of attrition is in the United States. He reports that in the academic year of 1993-1994, private and public schools hired 193,000 new teachers across the country. However, before the end of that same academic year, 213,000 teachers left the profession. Of these 213,000, only 24% left the profession due to retirement. In the same study, Ingersoll highlighted job dissatisfaction as one of the main reasons for such high attrition of teachers.

In addition to being listed as one of the reasons for teachers' attrition, job dissatisfaction also appears to be associated with another problem that affects teachers: stress. A study with 171 teachers from three school districts in Florida found a negative correlation between job satisfaction and stress, suggesting that those teachers who feel satisfied with their profession are less likely to feel stressed, and also those who feel stressed are less likely to find professional satisfaction (Pearson & Moomaw, 2005). Years later, a study involving 1,430 practicing teachers in Canada (Klassen & Chiu, 2010) also found similar results. Findings from a cross-cultural study involving 500 teachers from South Korea, Canada, and the United States (Klassen, Usher & Bong, 2010) also support the negative relationship between job satisfaction and stress among teachers.

Stress can result in psychological and physical consequences for teachers, which impact their personal lives and also students' learning. Stress has been associated with anxiety, anger, frustration, hypertension, ulcers, migraine, and heart disease, among others (De Nobile & McCormick, 2005). A study involving a nationally representative sample of 21,307 teachers from public schools in South Africa explored the relationship between job stress and job

satisfaction, and the prevalence of stress-related diseases among teachers (Peltzer, Shisana, Zuma, Wyk & Zungu-Dirwayi, 2009). The results found that stress and low job satisfaction were associated with hypertension, heart disease, stomach ulcers, asthma, mental distress, and tobacco and alcohol misuse (Peltzer et al., 2009).

Explaining Job Satisfaction

A plethora of research in the counseling psychology and organizational psychology fields has been produced over decades, aiming to identify and explain job satisfaction (Duffy & Lent, 2009; Lent & Brown, 2006). According to Spector (1997) the models explaining job satisfaction can be classified into two major categories: job environment and individual factors. While "job environment" focuses on work conditions, including how people are treated, the nature of the job, and payment, among other elements, "individual factors" refers to workers' personalities and their professional experiences (Spector, 1997). The next paragraphs will present some of the most important models that have been used in the last decades to explain job satisfaction.

One of the oldest explanations for job satisfaction comes from the cognitive judgment approach developed by Thibaut and Kelley in the 1960's (Fritzsche & Parrish, 2005). This model assumes that "people evaluate their current role based on comparisons with their past experience in and observations of others in similar roles" (Fritzsche & Parrish, 2005, p. 188). However, this model has been criticized for taking into consideration only the cognitive dimension and ignoring the emotional aspects of job satisfaction.

Another model that has dominated the studies on job satisfaction for decades is the job characteristic model. "The main idea underlying the job characteristics approach is that aspects of the work environment impact work outcomes, such as job satisfaction" (Fritzsche & Parrish, 2005, p. 189). Therefore, to achieve the desired work outcomes, it would be necessary to

redesign job characteristics. This model is built upon a set of job dimensions that foster a worker's positive mood states (Hackman & Oldham, 1976). However, according to Morgeson and Campion (2002), this model is limited "because it only considers a narrow set of work design factors" (p. 589) and ignores other approaches that focus on work simplification and specialization.

A third model that has an important role in the studies of job satisfaction is the dispositional approach. Based on a longitudinal study with a national sample of over 5,000 men, Staw and Ross (1985) presented the dispositional approach as an alternative to the approaches that focused on situational and environmental conditions. The dispositional approach proposed by Staw and Ross suggests that workers have dispositions to develop more positive or negative feelings toward their jobs regardless of situational characteristics. For Staw and Ross, the solution for job dissatisfaction is not found in redesigning the job characteristics, but "simply selecting individuals for membership who have positive dispositions" (p. 478).

As in many other academic controversies, the most satisfying explanation is not found in the polarized answers, but in those that embrace and integrate apparently opposing theories. This also seems to be the case with job satisfaction. Next, I will present an integrative model that embraces individual and environmental characteristics to explain job satisfaction.

An Integrative Social Cognitive Model

To solve the conflict between concurrent explanations for job satisfaction, Lent and Brown (2006) developed an integrative social cognitive model. The model posits that positive affect, work conditions, self-efficacy, goal support and goal progress directly predict job satisfaction. In other words, Lent and Brown's model is based on the assumption that workers tend to feel satisfied with their jobs when they have psychological traits that predispose them to

experience positive affect, when they are offered favorable work conditions, when they feel competent regarding tasks to perform, when they make progress in relevant work goals, and when they feel supported to achieve work goals (Lent & Brown, 2006). The model also suggests that each factor mediates some of the other factors' effects in predicting job satisfaction, leading to the conclusion that, to understand job satisfaction it is also necessary to pay attention to the dynamics generated by the interplay of the identified predictors (Lent & Brown, 2006). For example, the model establishes that in addition to predicting job satisfaction directly, the relationship between self-efficacy and job satisfaction is also mediated by work conditions. In concrete terms, this means that teachers with higher levels of self-efficacy tend to perceive the work conditions at their schools as more favorable, which contributes to increased satisfaction (Lent & Brown, 2006). Figure 3 details Lent and Brown's model of job satisfaction.

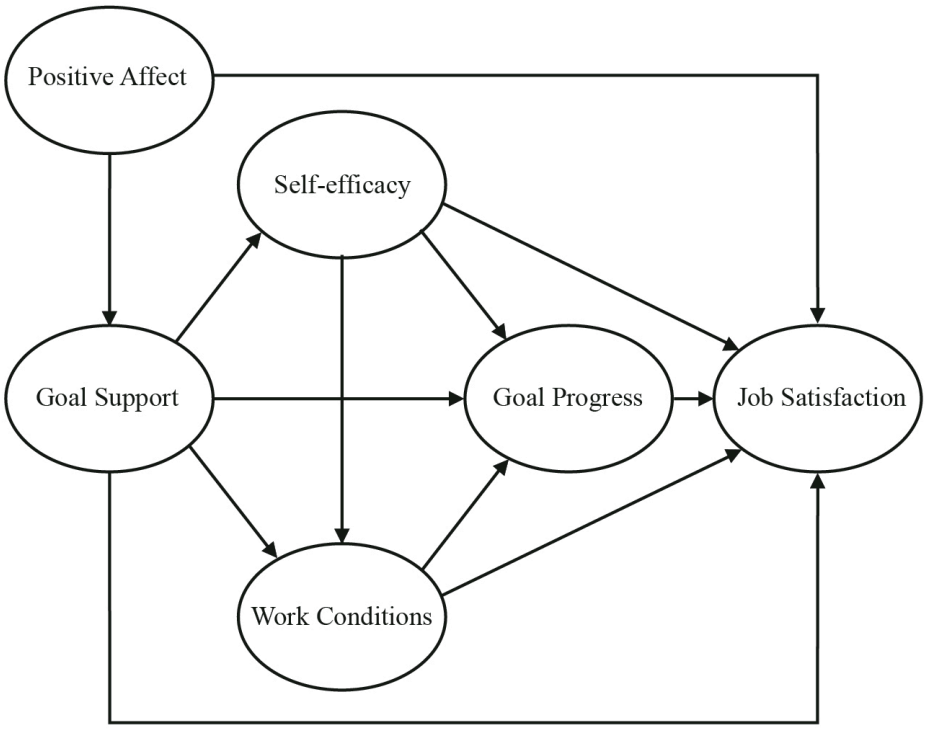

Figure 3. Lent and Brown's (2006) Model of Job Satisfaction. Reprinted from *Journal of Vocational Behavior, 75*, R. D. Duffy and R. W. Lent, Test of a social cognitive model of work satisfaction in teachers, p. 213, Copyright (2009), with permission from Elsevier.

In the next paragraphs, the definition of each one of the predictors is presented and accompanied by a summary of meta-analytic or empirical studies that shows its importance in predicting job satisfaction. The predictors are presented in the following order: positive affect, work conditions, self-efficacy, goal progress and goal support.

Positive affect. Several studies have focused on trait positive affect, "which refers to an individual's tendency to experience a positive state of emotion" (Duffy & Lent, 2009, p. 213). Thoresen, Kaplan, Barsky, Warren and Chermont (2003) conducted a meta-analysis of 79 studies and found a significant, positive correlation (r = .34) between positive affect and job satisfaction. Another meta-analysis of 27 studies, Connolly and Viswesvaran (2000) found a .49 correlation between positive affect and job satisfaction, suggesting that individuals who experience positive affect are more likely to report higher job satisfaction. In other words, positive affect explained 25% of the variance in general job satisfaction. However, Connolly and Viswesvaran (2000) remind us that despite the "substantially significant affective component to general job satisfaction, it is important to note that a sizeable percent of the total variance remains unexplained" (p. 275).

Work conditions. To explain job satisfaction, many other studies have focused on work conditions. In fact, this area of studies dominated the research on job satisfaction for many years (Spector, 1997). According to Lent (2008), working conditions include three major dimensions. The first one is general job characteristics, conditions, and outcomes, and has to do with "the

degree to which people perceive that their work environment provides a general set of favorable conditions, characteristics, or value fulfillment opportunities" (p. 467). This dimension also includes opportunities for emotional support and companionship. In fact, a meta-analysis of 51 studies that explored workplace climate found that individuals who experience rewarding social interactions at work are more likely to feel satisfied with their jobs (Carr, Schmidt, Ford, & DeShon, 2003).

The second dimension is person-environment fit. Lent (2008) defines person-environment fit as "the capacity of the work environment to provide specific resources that individuals desire" (p. 467). A meta-analysis of 172 studies assessing the individual's fit with aspects of work environment such as job, organization, group and supervisor found positive correlation (r = .56) between individuals' fit and job satisfaction (Kristof-Brown, Zimmerman & Johnson, 2005).

Perceived organizational support is the third dimension. Organizational support includes "several specific supportive or distressing work conditions" (Lent, 2008, p. 468). Meta-analytic findings indicate that perceived organizational support correlates strongly with job satisfaction (Rhoades & Eisenberger, 2002). Concurrently, a study conducted with 833 American female workers of a public-sector organization showed a negative correlation between job satisfaction and stressors such as (r = -.25) workplace incivility and (r = -.11) gender harassment (Lim & Cortina, 2005).

Self-efficacy. Researchers also looked at self-efficacy when trying to find predictors of job satisfaction. Self-efficacy refers to beliefs that people have about their ability to produce desired outcomes (Bandura, 1997). A meta-analysis of 135 studies assessed the relationship of self-esteem, self-efficacy, locus of control, and emotional stability with job satisfaction (Judge &

Bono, 2001). All elements had a positive correlation with job satisfaction. However, self-efficacy yielded the strongest correlation (r = .45), suggesting that the people with higher self-efficacy are more likely to feel satisfied with their jobs (Judge & Bono, 2001).

A study involving 2,688 teachers in Italy explored the relationship between job satisfaction, self-efficacy and collective-efficacy, which is defined as the "judgments that people make about a social system (family, team, organization, or community) and about its level of competence and effectiveness in specific domains of action" (Caprara, Barbaranelli, Borgogni & Steca, 2003, p. 821). The results suggest positive correlation between (r = .56) self-efficacy and job satisfaction, and (r = .70) collective-efficacy and job satisfaction (Caprara et al.). The authors of this study reached the conclusion that self-efficacy and collective-efficacy are "the main determinants of teachers' satisfaction" (Caprara et al., p. 2003, p. 828). Klassen and Chiu (2010) also found that the greater the self-efficacy, the greater the job satisfaction in a sample of 1,430 practicing teachers in Canada.

Goal progress and goal support. In addition to positive affect, work conditions, and self-efficacy, which were already discussed in this section, the model also includes goal support and goal progress (Lent & Brown, 2006). Goal progress refers to the ability to have work related goals and make progress toward them (Lent & Brown, 2006). Goal support refers to the extent to which individuals are presented with support or obstacles regarding their work goals (Lent & Brown, 2006). Research conducted by Baruch-Feldman, Brondolo, Ben-Dayan and Schwartz (2002), with 211 traffic enforcement agents, suggests that the higher the support for the achievement of one's work goals, the higher the individual's job satisfaction. The model is based on the assumption that job satisfaction is determined by the interplay of these five

predictive factors: positive affect, goal support, self-efficacy, work conditions and goal progress (Lent & Brown, 2006).

Testing Lent and Brown's Model

Lent and Brown's (2006) model was primarily tested with college students (Lent, Singley, Sheu, Schmidt, & Schmidt, 2007; Lent, Taveira, Sheu, & Singley, 2009). Since then, three studies tested this model with teachers. In the next paragraphs, three tests of Lent and Brown's (2006) model with teachers will be presented in chronological order with a fair amount of detail to allow some inferences regarding the mixed results of each test.

Test 1. Duffy and Lent (2009) tested the model with a sample of 366 full time teachers in North Carolina. The participants were mostly females (81%) and White (93%). Participants taught at elementary (38%), middle (36%) and high school (26%) levels.

Researchers used a set of instruments to assess each construct. Job satisfaction was measured with the five-item version of the Index of Job Satisfaction and the Teacher Satisfaction Scale. Positive affect was assessed with the Positive Affect (PA) items of the Positive and Negative Affect Scales (PANAS). To measure work conditions, researchers used three instruments. One assessed person/organization fit, the second needs/supplies fit and the third was the Perceived Organizational Support Scale-Short Form. The measurement of self-efficacy involved the use of three scales: the Teacher Self-Efficacy Scale-Short Form, the Personal Efficacy Beliefs Scale, and a modified version of a goal self-efficacy instrument. Goal progress was measured using a five-item scale adapted from an instrument originally created to assess progress on a particular goal. And goal support was assessed with an adapted version of a scale originally created to measure marital partner goal support.

The results offered mixed support for the model. While positive affect, work conditions and self-efficacy directly predicted job satisfaction, goal progress and goal support did not predict job satisfaction directly (Duffy & Lent, 2009). Despite the mixed results, the authors of the study concluded that "the set of predictor variables within the social cognitive model accounted for 75% of the variance in work satisfaction" (Duffy & Lent, 2009, p. 220).

Test 2. The second test was conducted by Lent et al. (2011). This tested involved 235 middle and high school teachers in Italy, of whom 84% were women.

In comparison to the test conducted by Duffy and Lent (2009), there were some differences in the instruments used to assess the constructs. Job satisfaction was measured only by the Index of Job Satisfaction. From the three scales that measured work conditions on test one, only the Perceived Organizational Support Scale-Short Form was used. The assessment of self-efficacy also dispensed with two of the three scales, and used only the Teacher Self-Efficacy Scale-Short Form. A 14-item scale was designed to assess goal progress and an 8-item measure was created to assess goal support.

While the data supported most of the relations proposed by the model, the results showed that goal progress and self-efficacy did not produce a significant direct path to job satisfaction. However, when mediated by work conditions, self-efficacy predicted job satisfaction. The results of this study also indicate that, similar to the findings by Duffy and Lent (2009), work conditions and positive affect were "the two strongest direct predictors of job satisfaction" (Lent et al., 2011, p. 95).

Test 3. A sample of 5,022 full-time teachers (63% women) from private and public schools in United Arab Emirates took part in the test conducted by Badri et al. (2013).

According to the authors the measures used in this test replicated the ones used by Duffy and Lent (2009). However, in the list of instruments used to assess the constructs, they did not include the instruments used to assess self-efficacy.

The results showed that most of the direct and indirect paths of the predictors toward job satisfaction were significant. This time, however, goal support and self-efficacy did not predict job satisfaction directly. But yet, self-efficacy predicted job satisfaction when mediated by other predictors. Once again, positive affect and work conditions were the strongest predictors of job satisfaction (Badri et al., 2013). Despite the differences with the results of the previous tests of the model with teachers, the authors state, "the paths representing direct and indirect effects of the predictors on job satisfaction provided statistical evidence of the validity of the five-component model of job satisfaction predictors" (Badri et al., 2013, p. 19).

In fact, the comparison between these three studies shows that self-efficacy did not directly predict job satisfaction in tests two and three, goal progress failed as a direct predictor in tests one and two, and goal support did the same in tests one and three. While there are no definite answers, the different results found in these tests may be due to a series of factors involving study design and participant characteristics. Note, for example, that each test was conducted in a different country. The United States, Italy and the United Arab Emirates have many cultural differences. Another possible explanation may be related to gender differences regarding each of the constructs involved in these tests. Test three had a larger number of male participants (37%) than test one (7%) and test two (16%). Finally, test two differs from the other tests not only culturally or in the number of males and females, but also in the use of instruments. Researchers decided on fewer scales and also included two original scales: one to assess goal progress and the other to assess goal support. Despite these differences, when comparing the

three tests it is clear that positive affect and work conditions were consistently found as direct predictors of job satisfaction.

Job Satisfaction in the Context of Leadership

Studies on teachers' job satisfaction can be framed from a mere theoretical perspective to increase the body of knowledge of the fields of education and psychology. However, the way they are conceptualized, conducted and presented can also include a practical perspective. This is the case with this study, as it aims to contribute to the practice of educational leaders. While educational leaders are not the participants of this study and leadership is not one of the variables that comprise the tested models, both leadership and the role of the educational leaders are intrinsically and indirectly connected with this study. To identify this connection, it is necessary to look at two main parts of this study: the theoretical framework and the variables that comprise the tested models.

First, it is important to step back for a moment and locate leadership within the larger picture of the theory that informs this study. As mentioned in the Theoretical Framework section, the social cognitive theory is based upon three main determinants of human agency: behavior, environment and personal factors (Bandura, 1986). While this study does not include school principals or other educational leaders per se, its results may speak to them because they are chiefly responsible for shaping the school environment and also for putting in place educative processes influencing teachers' cognition regarding their professional practices, their role and other individuals and groups involved in the school setting.

Looking specifically at leadership and job satisfaction, it is possible to identify at least three other ways in which the identification of predictors of job satisfaction can contribute to educational leaders. First, research has shown that certain leadership styles such as

transformational leadership are associated with higher job satisfaction (Liu, Siu & Shi, 2010; Smith, Bryan & Vodanovich, 2012). According to Bass (1985), transformational leaders can be defined as those who use their charisma to inspire their followers to identify with them, to set higher goals, to seek new solutions, and to move beyond their present status. But the association between leadership and job satisfaction is not limited to positive characteristics of leaders. Leary et al. (2013) found that dysfunctional leadership behaviors such as intimidation and avoidance are associated with low job satisfaction and low employee engagement.

Beyond these relations between leadership and job satisfaction, it is important to consider job satisfaction in the broad context of leadership because some of the predictors of the model to be tested in this study refer directly to the role of the leader. For example, the instrument that assesses goal support explicitly asks about the support received by the schools' administrators (Duffy & Lent, 2009). Leader support is also an important factor that enables individuals to develop their sense of self-efficacy (Bandura, 1997). The results of this study may also inspire leaders to improve the job satisfaction of their employees by shaping the environment, providing educative opportunities and becoming more supportive and enabling.

Summary

This section presented the importance of job satisfaction, showing that when dissatisfied with their jobs, teachers tend to report higher levels of stress. Different approaches to explain job satisfaction were also presented, and followed by a close look at the Lent and Brown (2006) model of job satisfaction, which integrates the two main categories identified by Spector (1997) as the most common explanations for job satisfaction: job environment and individual factors. Lent and Brown's model assumes that job satisfaction can be predicted directly by positive affect, work conditions, self-efficacy, goal progress, and goal support. The model also suggests

that job satisfaction can be predicted by the interplay of these factors. In addition, this section presented three tests of the Lent and Brown model that were conducted with teachers and which yielded mixed results. Finally, job satisfaction was also situated in the larger context of leadership, as literature indicates a close relationship between these two constructs. The next section presents a summary of the body of research conducted so far on loneliness.

Loneliness

As much as human beings need food and water for survival, they also need satisfying social relationships for their healthy development (Baumeister, DeWall, Ciarocco & Twenge, 2005). However, despite humans' intrinsic social nature, creating and maintaining rewarding relationships is not always easy, especially for those individuals who experience loneliness. This section begins with a definition of loneliness, which is followed by a discussion about the prevalence of loneliness by age and gender. Next, the similarities and differences between loneliness and depression are reviewed. Then, I will discuss how loneliness increases the risk for morbidity and mortality, and some interventions used to reduce loneliness are discussed. Finally, research on loneliness that included teachers as participants is briefly presented. This section ends with a summary of the main characteristics of loneliness.

Defining Loneliness

Loneliness is the subjective experience of perceived discrepancy between the desired and the actual quality of a person's relationships (Cacioppo & Patrick, 2008; Margalit, 2010; Masi et al., 2011). Loneliness is less related to the quantity of relationships than it is to the quality of human interactions. Lonely individuals may spend many hours every day surrounded by friendly colleagues at work or by caring family members, but yet they will perceive the quality of these interactions as unsatisfactory (Cacioppo & Patrick, 2008). Research shows that there is no

statistically significant difference in time spent alone for those who feel lonely and for those who feel satisfactorily connected with others (Hawkley, Burleson, Berntson & Cacioppo, 2003). Loneliness has to do with the perceived quality of relationships, and it is distinct from social isolation, which is defined by a low number of social networks.

Loneliness is a distressing emotional experience considered to be a response to unfulfilled needs for social connection (Margalit, 2010). However, it is not a disease (Cacioppo & Patrick, 2008). It is a deficit similar to hunger or thirst that motivates the individual to act in order to achieve equilibrium again. This is why loneliness is a transient or temporary state for many individuals (Masi et al., 2011). However, there are those who do not succeed in creating meaningful connections which would otherwise diminish their distress. "For as many as 15-30% of the general population, however, loneliness is a chronic state" (Hawkley & Cacioppo, 2010, p. 218). Such a state is a risk factor for social problems as well as physical and mental problems.

According to Cacioppo and Patrick (2008), there are three structural elements of loneliness which, when combined, can increase its detrimental effects. The first element is genetic vulnerability, which is expressed by the "genetic propensity that sets the thermostat for feelings of loneliness, making the individual crave social connection a little or a lot" (Cacioppo & Patrick, 2008, p. 133), and "the level of distress aroused by social disconnection" (Masi et al., 2011, p. 221). Research conducted on siblings in the United States and in the Netherlands suggests that the genetic influence in loneliness is approximately 50%, while environmental influences account for the other half of the influences (Bartels, Cacioppo, Hudziak & Boomsma, 2008; Boomsma, Willemsen, Dolan, Hawkley, & Cacioppo, 2005; McGuire & Clifford, 2000).

The second structural element of loneliness is self-regulation. Self-regulation is the "ability to exert control over one's own inner states, processes and responses" (Baumeister et al.,

1994, p. 6). According to Baumeister et al. (2005), social acceptance is one of the motivations for the development of this ability. When the goal of positive relationships is not achieved and an individual experiences rejection, their ability to self-regulate reduces, leading to behaviors that will ultimately reinforce the feelings of loneliness, in a self-destructive cycle (Cacioppo & Patrick, 2008). Repeated experiences of distress motivated by feelings of social exclusion or rejection impair the ability to self-regulate (Baumeister et al.; Hawkley & Cacioppo, 2010).

The third structural element of loneliness is social cognition. When loneliness is combined with the impairment of self-regulation, the individual tends to experience distorted social cognition, which defines the way they see themselves, others and the interactions established among them (Cacioppo & Patrick, 2008). Such cognitive distortions lead people who experience more intense loneliness to develop hypersensitivity to negative social information, to rate their social interactions more negatively, to fear negative evaluation, to engage in more defensive behaviors to avoid rejection and to form worse impressions of others (Cacioppo & Hawkley, 2009; Cacioppo, Hawkley et al., 2006).

The snowball effects of the emotional, cognitive and behavioral consequences of loneliness on a social network led Cacioppo, Fowler and Christakis (2009) to state that loneliness is actually contagious. Contagion is defined by Cacioppo and Hawkley (2009) as "the transmission of a state by direct or indirect contact, and virulence is determined, in part, by exposure" (p. 452). Based on longitudinal analyses, Cacioppo et al. (2009) found that when surrounded by people with a higher level of loneliness, those with a low level of loneliness tend to feel lonelier over time. "Loneliness not only spreads from person to person within a social network but it also reduces the ties of these individuals to others within the network" (Cacioppo et al., 2009, p. 986).

The spread of loneliness is modulated by three factors: gender, proximity and type of relationship (Cacioppo et al., 2009). According to Cacioppo et al. (2009), loneliness is more easily spread among females than among males. This finding is especially relevant in the context of this study because, as will be presented in the next section, the majority of those teaching kindergarten through high school in Brazil are females. The predominance of transmission of loneliness through females can possibly be explained by the fact that women are more likely to share their emotions than are men. These researchers also found that loneliness is more easily spread between those who have a close relationship, especially because of the emotional exchange that these relationships may evoke. The influence of the type of relationship indicates that close friends are more likely to spread loneliness than are family members (Cacioppo et al., 2009).

Prevalence

According to Weiss (1973), one of the first to develop a theory on loneliness, the experience of loneliness is pervasive, affecting 25% of the American population. More recent data show that intense loneliness has been found in approximately 6% of middle-aged adults (Masi et al., 2011). Among those over 65, the percentage rises to 40% of the individuals reporting feelings of loneliness at least sometimes (Hawkley & Cacioppo, 2010).

While it is common to think that children may not experience loneliness, Margalit (2010) presents studies in which 22% of second graders studied reported feeling lonely. However, the number tends to increase as time passes. Loneliness seems to reach its peak during adolescence (Sippola & Bukowski, 1999). Approximately 80% of individuals younger than 18 years report some level of loneliness (Hawkley & Cacioppo, 2010). During the adolescent years, individuals set high expectations regarding the relationships in which they may experience loyalty and

shared intimacy with friends. Teenagers who do not develop coping skills to deal with the confrontation between reality and their social and emotional expectations may experience loneliness. While this experience seems to be normative for this phase, persistent feelings of loneliness during adolescence can be a risk factor for future mental health difficulties (Heinrich & Gullone, 2006).

In terms of gender, there is no agreement about which gender reports higher levels of loneliness. According to McManus (2011), gender differences vary according to the instrument used to assess loneliness. This argument is also corroborated by Borys and Perlman (1985), who affirm that in studies that use instruments that include the word "lonely", women are more likely to score higher. However, when instruments are used that do not require the inclusion of the word "lonely" or "loneliness", gender differences are usually not statistically significant. This is the case with the UCLA Loneliness Scale, the most widely used instrument in research regarding loneliness with adults (Pinquart & Sorenson, 2001). Studies in which this instrument is used do not find significant gender differences (Heinrich & Gullone, 2006). A possible explanation for these differences regarding the inclusion or not of the term "lonely" in the instrument is that women pay more attention to their emotions and are more likely to express their emotional state (Cacioppo et al., 2009).

Loneliness and Depression

From a theoretical and a statistical perspective, loneliness and depression are distinct constructs (Cacioppo, Hughes, et al., 2006; Margalit, 2010). While loneliness refers specifically to social connections and the feelings regarding those relationships, depression is a major mental disorder with multifactorial etiology associated with biological, psychological and social factors (Hansell et al., 2011) which is characterized by depressed mood; inability to enjoy activities that

in the recent past were sources of pleasure; insomnia and loss of energy. According to Cacioppo and Patrick (2008), loneliness works as a warning, prompting a desire to connect with others in order to overcome the uncomfortable feeling, while depression increases apathy, inhibiting any action meant to overcome such a state.

Cacioppo, Hawkley, et al. (2006) demonstrated from a statistical perspective that loneliness and depression are separable constructs. To complete this study, researchers had 2,525 students (1,314 females, 1,197 males and 14 undeclared) answer the R-UCLA Loneliness Scale and the Beck Depression Inventory. Cacioppo, Hawkley, et al. conducted a principal-axis factor analysis, which was followed by an oblique rotation, in order to allow correlated factors. The results showed that "the loadings of loneliness items on the depressed affect factor were very low (i.e., < 0.10), as were the loadings of the depressed affect items on the loneliness factors (i.e., < 0.19)" (Cacioppo, Hawkley, et al., 2006, p. 1060). This evidence gives statistical grounds to the theoretical distinction between loneliness and depression.

Even though depression and loneliness are independent constructs that express distinct dimensions of human experience, they usually appear together and are associated with a net of medical conditions such as altered immunity, alcoholism and suicidal ideation (Cacioppo et al., 2010). Loneliness is an important risk factor for depressive symptoms across the life span for healthy people as well as for people with medical conditions, as shown by the following studies.

An eight-year longitudinal study with 296 children (146 males and 150 females) from Lancashire, United Kingdom, showed that participants with enduring feelings of loneliness were more likely to report depressive symptoms (Qualter, Brown, Munn & Rotenberg, 2010). This finding led the authors to hypothesize that loneliness may lead to the development of

maladaptive cognitive biases and coping strategies that are associated with depression (Qualter et al., 2010).

To test the hypothesis that loneliness is a significant risk factor for depression in young people but also in older adults, Cacioppo, Hughes, et al. (2006) used a nationally representative sample, drawn from the 2002 wave of the Health and Retirement Study. The participants of this study were comprised of 1,945 subjects: European American (82.1%), African American (11.7%) and Latino American (6.3%). They were a total of 1,202 females and 743 males, over 54 years old.

This study found a positive relationship between levels of loneliness and depressive symptoms (Cacioppo, Hughes, et al., 2006) and also that this association was strong and statistically significant for both males and females, while stronger for males.

These findings were supported by another study with a population-based sample, comprised of 212 participants (111 females, 101 males), between the ages of 50 and 67, resident of Cook County, IL. Cacioppo, Hughes, et al. (2006) found that "loneliness remained a significant risk factor for depressive symptoms even after controlling for demographic variables" (p. 147) such as years of education, household income, marriage status, perceived stress, hostility, race and gender.

Loneliness as a risk factor for depression was also found in a 5-year longitudinal study, with annual data collection. From 2002 to 2006, Cacioppo et al. (2010) assessed the relationship between loneliness and depressive symptomatology in a sample of participants aged between 50 and 68 years old. In the first year the sample consisted of 229, but attrition over the five years led to a final sample of 163 participants. They found "that loneliness predicts if not promotes increases in depressive symptomatology regardless of age, gender, or ethnicity" (Cacioppo et al.,

2010, p. 458). Another finding was that the occurrence of loneliness in a given year would be a more important predictor of depressive symptoms in the following year than would the presence of depressive symptoms in that given year (Cacioppo et al., 2010).

The association between loneliness and depression is high across the life span of healthy persons from childhood to later adulthood. Not surprisingly, the link between loneliness and depression is also high in people with extreme health situations, such as HIV. Grov, Golub, Parsons, Brennan and Karpiak (2010) developed a study with 914 HIV-positive participants (640 males, 264 females, 7 transgender female and 3 transgender male), aged 50 and over, who lived or received health care in New York City. The goal of the study was to assess the role of perceived health, HIV-related stigma and loneliness in the prediction of depression.

This study found a strong association between loneliness and depression. The role of loneliness in predicting depression was higher than those of perceived health and HIV-related stigma. For example, "every one unit increase in the Loneliness scale resulted in a 6.4% increased odds of major depressive symptoms" (Grov et al., 2010, p. 633), while for each unit increase in the HIV Stigma Scale (a 40-item scale that measures the perceived stigma related to being HIV-positive), the odds of major depressive symptoms increased by only 1.3%.

Loneliness: Morbidity and Mortality

Loneliness is a risk factor for morbidity and mortality (Nummela et al., 2011; Penninx et al., 1997; Seeman, 2000; Sugisawa, Liang & Liu, 1994). Cacioppo and Patrick (2008) point out that there is no simple explanation for how loneliness may impact health negatively. The best way to understand the impact of loneliness on the development of disease, which may even lead to death, is to consider the processes of wear and tear related to health behaviors, stress, and lack of rest and recuperation, all of which accelerate physiological decline (Hawkley & Cacioppo,

2007). Discussing the research on these health conditions that are associated with loneliness is important to this study, because health conditions have a direct impact on an individual's professional life. For example, poor health may provoke absenteeism and even early retirement among teachers, impacting schools financially through the need to hire substitute teachers, and also in terms of students' productivity as measured by test scores (Herrmann & Rockoff, 2012). Some conditions that associate loneliness with morbidity and mortality, and which also show the pervasiveness of the impacts of loneliness, will be presented in the next paragraphs.

Stress. Stress has been known to impact psychological and physical health, and when combined with other elements, even becomes a predictor of premature mortality (Braveman, Egerter, & Mockenhaupt, 2011; Keller et al., 2012). When it comes to people with a high score in loneliness, the impact of stress can be even more intense.

Research has shown that for older adults, the impact of stress seems to be higher than for younger adults. Hawkley and Cacioppo (2007) found that older adults (mean age of 57.4) with a higher score in loneliness reported a larger number of stressors than did non-lonely adults. Among young adults, there is no difference in the objective amount of major life stressors for college students classified as lonely or non-lonely (Cacioppo et al., 2000). However, young adults with a higher score in loneliness "reported higher levels of perceived stress, more frequent and more severe hassles, and less intense 'uplifts' than non-lonely individuals" (Hawkley & Cacioppo, 2003, S100). While age is an important factor in the perception of stress, Cacioppo and Patrick (2008) call attention to the inefficient coping mechanisms used by lonely people. Those with higher scores in loneliness respond to stressors with passivity, pessimism and avoidance. They are also less likely to reach out to others for help (Cacioppo et al., 2000).

The relationship between loneliness and stress, however, is not limited to studies based on self-reporting instruments. Human organisms produce physiological responses to stress. One of these responses can be assessed by measuring the level of cortisol.

Adam et al. (2006) found that feelings of loneliness on a given day predicted higher cortisol awaking response on the following day among older adults. This finding is corroborated by a study developed by Doane and Adam (2010), who studied a sample of 108 young adults (81 females, 27 males), with a mean age of 19.02. Young adults also presented a greater cortisol awaking response the following morning after reporting higher feelings of loneliness and sadness during the previous day.

In Japan, Okamura, Tsuda and Matsuishi (2011) conducted a study with 90 female full-time workers in order to assess the differences in cortisol between a high-loneliness group and a low-loneliness group on both weekdays and weekends. The results yielded no significant difference in workdays between the groups. However, on the weekends the low-loneliness group presented a lower cortisol awaking response than did the high-loneliness group. In fact, the high-loneliness group did not show a significant difference in cortisol awaking response between workdays and weekends. These findings lead researchers to conclude that lonely people do not have a positive experience of the weekend, when they are more likely to have less or no satisfying social contact (Okamura et al., 2011).

Rest and restoration. Cacioppo and Patrick (2008) define sleep as "the quintessential restorative behavior" (p. 107). In fact, research has shown that short sleep duration is a risk factor for hypertension and mortality (Gangwisch et al., 2006; Kripke, Garfinkel, Wingard, Klauber & Marler, 2002). Not surprisingly, poor quality of sleep and loneliness are associated.

In a study with 64 undergraduate students, Cacioppo, Hawkley, et al. (2002) found that loneliness predicted the restorative quality of sleep. Even though there was no significant difference in total sleep time between lonely and non-lonely participants, lonely participants showed poorer sleep efficiency. In a similar study, this time with older adults, Hawkley et al. (2010) confirmed that there is no association between loneliness and sleep duration and that loneliness is nonetheless a predictor of poor sleep quality. They also found that feelings of loneliness on a specific day predicted daytime dysfunction (fatigue, low energy, exhaustion) during the following day.

To test Hawkley and Cacioppo's (2007, 2010) theory of loneliness and its impact on health through the decline of restorative processes, Segrin and Domschke (2011) conducted a study with 224 participants (146 female, 78 male), with ages ranging from 18 to 81 years. In this study they found that loneliness is negatively correlated with good health and with specific restorative processes such as good sleep quality, leisure activities and leisure attitudes. These findings not only corroborate the previous studies about the association between loneliness and poor sleep quality, but also point to another important restorative process, leisure activities.

Health behavior. In terms of health behavior, a growing body of research has related loneliness with higher body mass index and smoking (Lauder, Mummery, Jones & Caperchione, 2006), alcohol consumption (Akerlind & Hornquist, 1992), risky sexual behavior of men and women (Martin & Knox, 1997; McManus, 2011; Munoz-Laboy, Hisch & Quispe-Lazaro, 2009), compulsive Internet use (Amichai-Hamburger & Ben-Artzi, 2003; Morahan-Martin & Schumacher, 2003; Odaci & Kalkan, 2010; Whitty & McLaughlin, 2007), and reduced physical activity in different age groups (Hawkley et al., 2009; Page, Frey, Talbert & Falk, 1992; Page & Hammermeister, 1995; Page & Tucker, 1994). However it is important to keep in mind that the

association between loneliness and these unhealthy behaviors does not imply a causal relationship. Consider, for example, the study developed by Page and Hammermeister (1995) that shows a negative relationship between loneliness and exercise frequency among college students enrolled in physical education activity classes. Participants who did not exercise or exercised infrequently scored higher in loneliness, while those who exercised seven times a week presented a low score in loneliness. However, these results should not be taken as a cause and effect relationship. While loneliness may cause reduction of physical activity and reduced exercise frequency may cause loneliness, both may be caused by another variable. This observation also applies for other correlational studies presented in this section.

Interventions to Reduce Loneliness

Loneliness, defined as a "debilitating psychological condition" (Cacioppo et al., 2010, p. 453) is highly associated with depression, alcohol abuse and other life threatening situations (Cacioppo & Patrick, 2008), and requires interventions, especially for those who may be at risk of reaching its chronic state. However, not all interventions are effective in reducing loneliness. This section will explore the types of practices that have been shown to be effective in reducing loneliness according to a meta-analysis developed by Masi et al. (2011).

For the selection of articles, mostly retrieved using PsychINFO and Pubmed databases, Masi et al. (2011) established the following criteria: the studies to be included in the meta-analysis had to be published in a peer-reviewed journal or in a dissertation between 1970 and 2009, and written in English. In addition to that, in these studies loneliness, as well as the intervention effect, had to be assessed quantitatively in order to allow for the calculation of effect size. The data reported in these articles had to be original and not reported anywhere else. Articles reporting individual cases would be eliminated; only articles involving a treatment group

would be included. Finally, lowering loneliness had to be the specific goal of the study and "the intervention had to directly target loneliness" (Masi et al., 2011, p. 225). The use of these criteria reduced the initial 928 references to 50 studies qualified for this meta-analysis, which were grouped and analyzed according to the research design: single-group pre-post studies, nonrandomized group comparison studies and randomized group comparison studies.

Improving social skills, enhancing social support, increasing opportunities for social contact and addressing maladaptive social cognition were identified as the primary four types of interventions to reduce loneliness. Interventions that addressed maladaptive social cognition were shown to be more effective than the other strategies (Masi et al., 2011).

This result may be explained by the fact that lonely people are more attentive to negative social information, hold more negative expectations for others and themselves, react more intensely to negatives and engage in self-defeating behaviors (Cacioppo & Patrick, 2008).

Social cognitive training strategies are based on cognitive behavioral therapy. Social cognitive training helped to create a more accurate perception of reality, giving more objective tools for assessment of daily situations and of a person's own thinking (Masi et al., 2011). For example, the study conducted by Williams et al. (2004), which was included in the category of social cognitive training strategies and belonged to the randomized group comparison studies in the meta-analysis performed by Masi et al. (2011), used many strategies; one of them is called Use Thought Substitution. This technique "takes a negative thought such as "I am a total failure" and substitutes it with a positive thought such as "I'm often successful at the things I do" (Williams et al., 2004, p. 816).

Studying Loneliness with Teachers

Studies focusing on loneliness among teachers are rare. Most studies on loneliness involving teachers aim to investigate children's experience of loneliness. For example, teachers in the UK participated in an eight-year longitudinal study that explored whether or not childhood loneliness predicted adolescent depressive symptoms. In this study, teachers completed the Teacher-Classroom Adjustment Rating Scale, to rate school adjustment problems of the students who took part in the study (Qualter et al., 2010). A number of other studies assessing loneliness include teachers in a similar way (Erath, Flanagan, Bierman & Tu, 2010; Fontaine et al., 2009; Lim & Smith, 2008; Margalit, Mioduser, Yagon & Neuberger, 1997).

Teachers have also taken part in research that measured their level of loneliness, but the goal of these studies was to explore instruments used to assess loneliness. Dussault, Fernet, Austin, and Leroux (2009) examined the factorial validity of the Revised UCLA Loneliness Scale with a random sample of 1,157 Canadian teachers. In discussing the results the researchers addressed only the factorial structure of the scale. Similarly, Russell (1996) evaluated reliability, validity and factor structure of the UCLA Loneliness Scale (Version 3) with different groups. Participants included students, nurses, elderly and a sample of 316 public school teachers in Iowa. Again, in the discussion of the findings, Russell focused exclusively on the properties of the scale, not on specific characteristics of each group.

The only study found that explores loneliness among teachers linking it to professional experience was conducted by Neto and Barros (1992), with a sample of 296 teachers (240 females and 56 males) in Portugal.

Neto and Barros (1992) found that teachers with more than 20 years in the profession are significantly lonelier than those with less time teaching. Also, teachers who teach in the initial grades are lonelier than those who teach in the final elementary grades or in high school. In

addition to exploring these professional characteristics, this study also looked at some psychological measures. Loneliness was found to be associated with social anxiety (r = .59), psychological maturity (r = -.19), self-efficacy (r = -.21), and life satisfaction (r = -.36), among other variables (Neto & Barros, 1992).

The relationships between loneliness and self-efficacy, and loneliness and life satisfaction, are very important to the present study. Self-efficacy, as it will be presented carefully in the next section, is one of the predictors of job satisfaction (Duffy & Lent, 2009; Lent & Brown, 2006). While Neto and Barros' (1992) study may be one of the first to associate loneliness and self-efficacy, it is not the only one. Dussault and Deaudelin (2001) found a negative correlation between loneliness and self-efficacy (r = -.25) in a sample of 314 French Canadian undergrad students enrolled in education majors. The results of these studies suggest that the higher the level of loneliness, the weaker the beliefs about one's ability to produce desired outcomes. Another study linking loneliness and self-efficacy in a sample of American undergraduate students (Wei, Russel & Zakalik, 2005) also supports the findings by Neto and Barros, and Dussault and Deaudelin.

Research has also explored the relationship between life satisfaction and job satisfaction. A meta-analysis of 34 studies on job and life satisfaction found a positive correlation (r = .44) between these two constructs (Tait, Padgett & Baldwin, 1989). A more recent study with a sample of 235 Italian teachers found a positive correlation (r = .46) between job satisfaction and life satisfaction (Lent et al., 2011). Because a relationship between loneliness and job satisfaction has not yet been established, the fact that loneliness is associated with life satisfaction may increase the likelihood that loneliness can also predict or at least be associated with job satisfaction.

Summary

This section of the literature review summarized important points regarding the research on loneliness. This distressing emotional response to the need of social connection is comprised of three structural elements: genetic vulnerability, impaired self-regulation and distorted social cognition (Cacioppo & Patrick, 2008; Margalit, 2010). Loneliness, however, is not a disease, although it is a risk factor for depression. Loneliness has also been associated with stress, poor sleep quality and unhealthy behaviors such as reduced physical activity, smoking, alcohol consumption, risky sexual behavior and compulsive Internet use. When it comes to reducing loneliness, interventions that addressed maladaptive social cognition were shown to be more effective than the other strategies (Masi et al., 2011).

This section also described the three main categories of studies on loneliness that have included teachers as participants. Teachers usually take part in studies that focus on loneliness to assist in the assessment of children's social skills. They also participated in studies that aimed to evaluate instruments that measure loneliness. Only one study that linked teachers' level of loneliness and their professional practice was found (Neto & Barros, 1992). This study also showed an association between loneliness and predictors of job satisfaction.

The next section of the literature review will explore the context in which this present study will take place, through the description of some geographic characteristics of Brazil, and also a close look into the reality of Brazilian teachers' demographics, including information on their job satisfaction.

Brazilian Teachers

Being a teacher in Brazil is synonymous with having low social status and a low salary. Due to the negative conditions connected with this profession, those who have received better

educational opportunities do not include teaching while considering their professional options. In fact, the teaching profession from kindergarten to high school has almost exclusively attracted students with a low socioeconomic status (Louzano et al., 2010). In the national exam that assesses high school students' performance of 2005, when separated by professional aspiration, students who aspired to be teachers comprised the bottom 16% of the worst scores. This reality impacts the quality of education as whole in Brazil, with direct impact on students (Louzano et al., 2010).

To keep track of the situation of teachers and students, every year the Brazilian government conducts an educational census to assess some aspects of Basic Education across the five geographical regions of Brazil. The census of 2011 showed that in that year 50,972,619 Brazilian students were enrolled in Basic Education in public and private schools. To attend to such a number of students, Brazil counted 2,039,261 teachers that year. These numbers indicate a ratio of 25 students per teacher (INEP, 2012). However, there is not an exclusively unified picture of the reality faced by teachers in Brazil. Their reality depends on factors such as gender, educational background, the geographical region where they live, and the type of school in which they work.

The goal of this section of the literature review is to present a description of Brazilian teachers. A brief description of Brazil and its geographical regions is presented here first to provide a sense of context. Next, an exploration of the organization of the Brazilian educational system and the differences between private and public schools is provided. Then, using data from the educational census of 2003, this section presents a description of the distribution of teachers by geographical regions, age, gender, relationship status, offspring, salary and level of

job satisfaction. To complete this section, research on job satisfaction with Brazilian teachers is discussed. This section ends with a brief summary of the data presented.

Brazil

With a population of 190,732,694 persons, Brazil is divided in five geographical regions: North, Northeast, South, Southeast and Central West. Figure 3 shows a map of Brazil, divided by geographical regions and states.

Figure 4. Map of Brazil

According to the Census 2010, the Southeast is the most populated (80,353,724 inhabitants) and also the most prosperous region of Brazil (IBGE, 2010). São Paulo and Rio de Janeiro, the two most populated and famous cities of Brazil, are also located in the Southeast. This region not only concentrates population and wealth; the Southeast is also home for the most popular magazines, newspapers and TV networks, which enable this region to define fashion, music, and lifestyle for the other regions.

The Northeast is the second most populated region (53,078,137 inhabitants). The Northeast is also the poorest region of Brazil (IBGE, 2010). The drought that affects this region every year, as well as a long history of political oligarchies, hinders the development of this region. However, the Northeast is also known for being the region with the largest coastline in the country, attracting tourists from all around the globe (Branco & Williams, 2005).

The South region has 27,384,815 inhabitants (IBGE, 2010). The population is comprised largely of German, Italian and Polish immigrants, who arrived in Brazil in the 19th century (Branco & Williams, 2005).

Despite its large area, the population of the North region is home to only 15,865, 678 persons (IBGE, 2010). This region is also the home of the Amazon rainforest and of the largest indigenous population in Brazil.

The least populated (14,050,340), but not the least important region of Brazil is the Central West (IBGE, 2010). Despite the large production of soy and cattle, the Central West of Brazil is more known for Brasília, the capital of Brazil and the home of its federal government. Brasília was specially built in a then remote area of the country between 1955 and 1960.

Despite decades of struggle and many failed economic plans, Brazil finally began experiencing financial stability in the early 2000's. In December 2011, Brazil overtook the UK as the world's sixth largest economy (Antunes, 2011). Economic growth paired with social development has put Brazil among the most important countries in the world. However, Brazil has not been successful when it comes to education. In the same year that Brazil attracted international attention for its financial growth, UNESCO (2011) ranked it in the 88th position in terms of education. Despite a growing economy that was unharmed by the financial crisis of

2008, Brazil provides education of a lower quality than countries with very low economic growth such as Tunisia (81st) and Azerbaijan (23rd).

Education continues to be a major challenge to Brazil, not only in terms of literacy, but also in terms of quality. A study developed by the Pearson Foundation (2012) that aimed to assess the global index of cognitive skills and educational attainment ranked Brazil in the 39th position of the 40 countries that took part in this study. The following sub-sections will shed light on a very important topic related to the quality of education: the teachers, their educational background and their job situation.

The Brazilian Educational System

Article 21 of the Leis de Diretrizes e Bases da Educação Nacional (LDB), the law that defines and organizes education in Brazil, states that the education provided by Brazilian schools is comprised by Basic Education and Superior Education (Brasil, 2010). Basic Education includes Kindergarten, nine years of Fundamental School and three years of High School. Similar to the United States, the Superior Education in Brazil consists of undergraduate, masters, and doctoral levels (Brasil, 2010). Educational institutions in Brazil can be public (run by cities, states or the federal government) or private.

Private schools in Brazil are an attractive alternative to the free public schools because of the educational quality and safety they provide for their students. Despite decades of struggles to improve the public education (Zibas, 1997), students from private schools achieve approximately 50% higher scores in national exams than students from public schools (Menezes-Filho, 2007). These differences put students from private schools in a better position to obtain seats in public universities, which are considered the best in Brazil. Using data from the 2005 entrance test in the Universidade Federal de Pernambuco, one of the most important federal universities in the

Northeast, Cavalcanti, Guimarães, and Sampaio (2010) found that public school students scored between 4.2% and 17% lower than did private school students.

Private schools are also more attractive to teachers. The salaries paid in private schools are higher than in public schools. This difference enables private schools to attract and select teachers who are more experienced and have higher degrees (Akkari, 2001).

In fact, the differences in terms of teachers' educational background are large. While the LDB demands a minimum of a college degree for those teaching in levels beyond the fourth grade, the reality is that Brazil is not quite there yet. However, the educational census of 2011 also shows an improvement in teachers' education in comparison to the five previous years. In 2011, 74% of the teachers were enrolled in or had earned a college degree or postgraduate degree, 25.4% had a high school degree, and 0.6% had not even started high school. While not ideal, these numbers already show improvement when compared with the findings of the 2007 educational census, which indicated that only 68.4% of the teachers were enrolled in or had completed a college degree or postgraduate degree, 30.8% had a high school degree, and 0.8% had not even started high school. This comparison shows an increase of 5.6% of teachers who were enrolled or had acquired a college degree in 5 years (INEP, 2012).

Special Census of 2003

The annual educational census, however, offers only a snapshot of the reality of Brazilian teachers. To get a broader picture of them, the government conducted a special census in 2003, focusing on teachers and their work conditions. In that year there were 2,497,261 working teachers in Brazil. Approximately 62% of them, a total of 1,542,878 teachers, answered the special census (INEP, 2006).

Teachers by geographical regions. As shown in the beginning of this section, the five Brazilian geographical regions have many differences. These differences also appear when it comes to education, specifically among teachers. Table 1 shows the distribution of teachers by geographical regions. This table also shows that Northeast and Southeast, the two most populated regions, also have the largest numbers of teachers. Both regions combined account for over 70% of the 2003 census respondents (INEP, 2006).

Table 1

Number of Teachers per Region

Region	Absolute Number	Percentage
North	123,398	8.00%
Northeast	520,660	33.75%
South	231,443	15.00%
Southeast	571,348	37.03%
Central West	96,029	6.22%

Table 2 shows the monthly average salary per region of teachers who teach at high schools and have a college degree. North and Central West, the two least populated areas of Brazil, have the highest monthly average salary. Northeast, the second most populated area of Brazil, has the lowest monthly average salary for teachers who teach at private and public high schools, and have a college degree.

Table 2

Monthly Average Salary per Region: High School Teachers with a College Degree

Region	Monthly Average Salary
North	R$1,206.00
Northeast	R$ 696.50
South	R$ 890.00
Southeast	R$ 970.00
Central West	R$ 1,000.00

Age. When it comes to age, 7.86% of Brazilian teachers are 24 or younger. Teachers between 35 and 44 years comprise the largest group. They account for 34.97% of the respondents. A total of 31.2% are between 25 and 34. Respondents between 45 and 54 made up 19.83%, and 4.82% are older than 55 years (INEP, 2006).

Gender differences. In terms of gender there is a strong imbalance among Brazilian teachers. Women accounted for 84.7% of the teachers, men 14.8%. A total of 0.5% of participants did not report their gender. Despite the fact that the teaching profession in Brazil is dominated by females, in 2003 males received an average of R$ 108.50 (13.3%) per month more than females (INEP, 2006). But there is a history behind these numbers.

The Brazilian law that allowed females to attend schools was approved on October 15, 1827 (Demartini & Antunes, 1993). The presence of female students created the need for female teachers. However, the national law that permitted the presence of females in the teaching profession also limited their professional scope. Females could not teach complex subjects such as geometry, for example. While males could enter the professional career as early as 18 years

old, females had to wait until they turned 25 to begin teaching. In addition to that, the law also demanded that they had to prove their appropriate moral conduct to the educational authorities (Demartini & Antunes, 1993; Rabelo & Martins, 2007).

Despite these restrictive rules, by the end of the 19th century Brazilian females had a large presence in the teaching profession. By that time half of the teachers in some Southeastern states were females. In 1920 females comprised 65% of all the teachers in Brazil (Vianna, 2001). But their growth in numbers also coincided with the devaluation of the profession and the low remuneration (Werle, 2005). While most of the men fled to better-paid and respected professions, those men who remained in the profession occupied leadership positions in the schools and taught almost exclusively high school students. Kindergarten and the early elementary grades were and continue to be the almost exclusive domain of female teachers (Rabelo & Martins, 2007). Despite the advances of the last decades, professional progress in a teaching career remains a challenge for females in Brazil (Rabelo & Martins, 2007; Vianna, 2001).

Relationship status and offspring. Most of the respondents of the 2003 educational census, 59.66%, were married, while 28.72% were single, 7.87% were divorced, 2.11% were widowed, and 1.64% did not report their relationship status. Regarding offspring, 65% of the Brazilian teachers who responded to the 2003 special census had children, 12.32% of them did not, and 22.40% didn't provide information regarding offspring (INEP, 2006).

Job satisfaction. In addition to demographic questions, the special census of 2003 also asked Brazilian teachers about their job satisfaction. Out of 1,542,878 respondents of the census, 8.45% of the teachers were very satisfied and 55.6% were satisfied with their profession. However, 25.5% were dissatisfied, 5.42% were very dissatisfied and 5.03% did not report their

level of satisfaction (INEP, 2006). Over 30% of the Brazilian teachers reported some level of dissatisfaction.

When considering the level of satisfaction per region and comparing the results with the average monthly salary, the census shows that satisfaction does not necessarily follow the size of one's salary. Teachers in the region North of Brazil received the highest monthly average salary (Table 2) and reported higher levels of satisfaction, as shown on Table 3. However, teachers from the Central West received the second highest monthly average salary but reported the lowest levels of satisfaction regarding their jobs. Similarly, teachers from the Northeast received the lowest monthly average salary and yet, they were ranked as the third most satisfied group of teachers who answered the 2003 census.

Table 3

Levels of Satisfaction per Region

Region	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Did Not Respond
North	9.34%	57.85%	22.90%	4.65%	5.27%
Northeast	8.00%	56.51%	24.56%	5.90%	5.03%
South	9.00%	57.12%	24.71%	4.18%	4.99%
Southeast	8.58%	54.21%	26.63%	5.53%	5.05%
Central West	7.53%	52.32%	29.27%	6.14%	4.74%

The data provided by the census 2003 also allows for assessing the satisfaction of Brazilian teachers according to the type of schools they teach in, public or private. As shown in Table 4, combining those who identified as dissatisfied and very dissatisfied, teachers from

public schools reported almost double the percentage of dissatisfaction as did teachers from private schools (INEP, 2006).

Table 4

Levels of Satisfaction per School Type

School Type	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	Did Not Respond
Public	7.37%	54.85%	26.98%	5.82%	4.98%
Private	16.21%	60.99%	14.84%	2.52%	5.44%

Putting together the pieces of information provided by the special census of 2003, it is possible to notice contradictions among job satisfaction factors for Brazilian teachers. First, the census shows that teachers from the Central West received the second highest monthly average salary and also that they were the ones that reported higher job dissatisfaction. This seems to indicate that salary is not the determinant factor of their dissatisfaction. However, the census also shows that teachers in private schools, who generally have higher salaries, are more satisfied with their jobs. This contradiction calls for a more integrative way to explain job satisfaction in Brazil.

Studies on Job Satisfaction in Brazil

Despite the reality of professional dissatisfaction revealed by the special census conducted in 2003 by the Brazilian government with more than a million and a half teachers (INEP, 2006), empirical research on job satisfaction in Brazil is not readily available. A search on SCIELO—the largest Brazilian academic electronic database, which is supported by the federal government—using the terms “job satisfaction” and “teachers” in Portuguese yielded

only four empirical studies on teacher job satisfaction. This small number of studies, however, offers some insight into the history of studies on teachers' job dissatisfaction in Brazil.

The oldest study of those found on SCIELO was published in 1985. The main goal was to explore factors other than individual characteristics that might be associated with job satisfaction (Penin, 1985). A total of 35 elementary school teachers from the city of São Paulo were interviewed. The results identified work conditions such as low salary, bureaucracy, and leadership style as impacting teachers' job satisfaction (Penin, 1985). This study reflects a shift from personal factors to job environment. These are the two factors that dominate the different models used to explain job satisfaction (Spector, 1997).

The second oldest study found was published 13 years later. This study conducted by Soriano and Winterstein (1998) assumed that teachers of mathematics and Portuguese are more valued than teachers of physical education. Based on this assumption, researchers hypothesized that teachers of physical education would feel less satisfied with their jobs. This study involved 236 elementary and high school teachers of public and private schools in São Paulo. Quantitative analysis showed that teachers of physical education reported higher job satisfaction than their counterparts in teachers of mathematics and Portuguese (Soriano & Winterstein, 1998). This study, however, did not explore individual or environmental factors that could be associated with job satisfaction.

A study published five years later explores teachers' dissatisfaction and turnover in Sao Paulo state. Lapo and Bueno (2003) analyzed the databases of the Secretaria Estadual de Educação (State Secretary of Education) of São Paulo. They found that between 1990 and 1995 the turnover among teachers of public elementary and high schools increased by 300%. In the second step of their research, Lapo and Bueno sent surveys to and interviewed former teachers of

public schools. They interviewed 16 teachers and received 158 completed surveys. The results indicate that low salary, poor working conditions, and devaluation of teachers correlated with dissatisfaction and motivation to leave the profession (Lapo & Bueno, 2003).

The most recent study on job satisfaction found on SCIELO, which involved 54 elementary teachers from public schools in the South of Brazil, also associated work conditions with teachers' dissatisfaction (Folle et al., 2008). Along with the other studies presented in this section, this article shows the emphasis is focused on environmental factors rather than on individual factors when exploring job satisfaction among teachers in Brazil. Low salary is the first factor discussed in the three articles that explored the work conditions that contributed to job dissatisfaction.

Work conditions, however, are just one of the major factors that explain job satisfaction in some models. The interplay between environmental and personal factors seems to generate a powerful dynamic that affects teachers' job satisfaction. However, once again, there are no articles based on empirical research available in online databases that explore the interplay of these forces among Brazilian teachers.

Summary

Despite the financial growth that Brazil has experienced in recent years, education remains a major challenge. Increasing the quality of teachers is without a doubt one of the most important issues that needs to be addressed if the overall character of education in Brazil is also to grow. Brazilian teachers come from low-economic-status families, and those who aspire to be teachers have the lowest performance in the national exams (Louzano et al., 2010).

A review of the annual educational census of 2011 and the special census of 2003 indicates an increase in the number of teachers pursuing a college degree or already possessing

one. The review showed that the majority of Brazilian teachers are females who are married and have children. The review also revealed that the monthly average salary varies according to the geographic region. Salaries are also different according to gender. Male Brazilian teachers receive higher salaries than their female counterparts.

In terms of satisfaction, the review suggested that teachers from the North of Brazil were the most satisfied with their jobs, while teachers from the Central West were the least satisfied. When considered according to the type of schools, private school teachers reported higher satisfaction with their jobs. Research on job satisfaction with teachers in Brazil has focused mainly on work conditions. Low salary, poor working conditions, and devaluation of teachers are the most commonly reported reasons for dissatisfaction and turnover.

Chapter Summary

A review of the literature set the context of the current research and the main topics of the related studies. The first topic addressed in the review of the literature was job satisfaction, focusing on Lent and Brown's (2006) integrative model, which identified five predictors of job satisfaction. Research supporting each factor as a predictor of job satisfaction was presented. This was followed by an exploration of studies on loneliness, its impact in the general population and specifically how teachers have been involved in research on loneliness. Finally, the context in which the current research will take place was presented through a brief description of Brazil, its educational system, and demographical information on Brazilian teachers, including job satisfaction.

Although over 30% of Brazilian teachers feel dissatisfied with their jobs, the research on job satisfaction in Brazil has focused only on work conditions. More recent models have shown that work conditions are important, but they do not explain job satisfaction alone. It is also

important to consider an individual's characteristics to achieve a deeper understanding of this issue (Lent & Brown, 2006).

The integrative model developed by Lent and Brown (2006) to explain job satisfaction includes individual characteristics such as positive affect and self-efficacy. However, it does not explore other individual factors that may predict these characteristics and may also predict job satisfaction. One important individual factor is loneliness. A vast body of research has found that those with high levels of loneliness tend to perceive themselves and others in a more negative way, to have lower self-efficacy, and to report low life satisfaction (Cacioppo & Hawkley, 2009; Dussault & Deaudelin, 2001; Neto & Barros, 1992).

Investigating the role of loneliness in predicting job satisfaction and its predictors is a benefit not only for the field of psychology, but also for workers in general and teachers specifically. Contributing to teachers' job satisfaction may also impact students indirectly.

The next chapter will discuss the research design, sample selection, data collection, and data analysis.

Chapter III

Method

This chapter presents the method used to answer the research questions that guide this study. The first section of this chapter discusses the research design. It is followed by a description of the eligibility criteria for participation in this study and the sampling strategy. Next, the data collection strategy is presented. The subsequent section describes the data analysis. This chapter ends with a summary that highlights the main elements of the methodology used to answer the research questions of this study.

Research Design

Drawing from the quantitative approach, this study used a correlational research design to achieve its goals. The first goal was to identify the characteristics of Brazilian teachers that appear associated with teachers' job satisfaction, teachers' self-efficacy, goal progress, goal support, work conditions, positive affect, and loneliness. The second goal was to test the overall fit of the teachers' job satisfaction models proposed in this study. The first model assumes that loneliness predicts teachers' job satisfaction directly and indirectly through positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions. The alternative model postulates that positive affect, teachers' self-efficacy, goal progress, goal support, and work conditions predict teachers' job satisfaction directly and indirectly through loneliness.

Sample Selection

The criteria for inclusion in this study were the following: (a) currently teaching, (b) teaching in a private and/or public schools in Brazil, (c) teaching in any grade from kindergarten to high school, and (d) older than 18.

The sampling strategy that was used for this study is snowball sampling. As an educator for over a decade, I have been involved in many educational projects involving teachers: lectures, trainings, retreats, etc. These activities allowed me to create a solid network with teachers in private and public schools from the five geographical regions of Brazil. To comprise a national convenience sample, Brazilian teachers teaching any grade in the basic education from public and private schools were invited to answer the survey and to identify additional participants who fit the inclusion criteria. The questionnaire was also sent to teachers' unions. A cover letter asked them to include the link for the questionnaire in their newsletters.

To ensure the ethical treatment of the participants, they were reminded of their rights not to participate in the survey, or to stop answering it at any time. Also, their identity remains anonymous: information such as their names, name of schools in which they work, the city and the state in which they live, and their computers' IP addresses were not collected. A phone number of a certified psychologist who could offer local references was provided in the event that participants experienced distress and felt they needed help.

A total of 1,345 records were collected for this study. However, 151 were removed from the data due to the inclusion criteria and a very small number of items answered. The remaining sample consisted of 1,194 teachers (830 women, 351 men, 13 non-identified). They taught in public (n = 906, 75.9%) or private schools (n = 153, 12.8%) or both (n = 129, 10.8%); 6 teachers (0.5%) did not provide this information. The grade levels taught were kindergarten (n = 137, 11.5%), fundamental (n = 373, 31.2%), high school (n = 239, 20%), more than one level (n = 433, 36.3%), and 12 (1%) of the participants did not respond to this question. In terms of geographical region, 411 were from the Southeast (34.4%), 327 from the Northeast (27.4%), 189

from the South (15.8%), 138 from the Central West (11.6%), 121 were from the North (10.1%), and 8 of them (0.7%) did not identify their geographical regions.

Data Collection Strategy

Participants received by e-mail a message with the necessary information about the study. The message included a link to an online self-administered survey questionnaire. Participants were reminded on the first page of the survey that by clicking on the link they were giving their informed consent to take part in this study.

Measures

Because the research was conducted in a Portuguese-speaking country and most of the measures had not yet been validated in the Portuguese language, to ensure the proper translation of the instruments, they were translated from English to Portuguese by a bilingual Brazilian, and back translated into English from Portuguese by a bilingual American. The two English versions (original and back translated) were compared to check for equivalence of meaning.

Demographics

Participants were asked to supply information about their age, gender, income, geographical region, relationship status, type of college attended, and degree achieved.

Professional characteristics

Participants were asked about the type of school they teach in, years of teaching experience, grade levels taught, their number of absences in the past term, number of working hours per week, and number of schools in which they teach.

The Revised UCLA Loneliness Scale (Portuguese Version)

The Portuguese version of the Revised UCLA Loneliness Scale is a unidimensional measure of loneliness (Neto, 1989). This measure is comprised of 18 items that are rated on a 4-

point Likert scale ranging from 1 (never) to 4 (often). A total score is computed based on the simple sum of responses. The Portuguese version of the Revised UCLA Loneliness Scale has two items less than the original scale in English. This is due to the fact that the Portuguese language uses the same word for "alone" and "lonely." Question 4 of the English version of the scale uses the term "alone," as in "I do not feel alone" (Russell, Peplau & Cutrona, 1980, p. 475). To reduce the social desirability effect that may come from a stigma related to loneliness, the author of the Portuguese version decided to eliminate this item. Also to make sure that the scale had an even number of positively and negatively worded items as the original version of the instrument, Neto eliminated item 12 of the original instrument, "My social relationships are superficial" (Russell et al., 1980, p. 475). The Portuguese version of the Revised UCLA Loneliness Scale has good internal reliability with a Cronbach alpha of .87 (Neto, 1989). The concurrent validity was assessed through the correlation of loneliness scores and other emotional states such as feeling abandoned (r = .35), depressed (r = .29), frustrated (r = .38), rejected (r = .44), or misunderstood (r = .38), among others (Neto, 1989).

Teachers' Job Satisfaction

Teachers' job satisfaction was assessed by a four-item scale developed by Skaalvik and Skaalvik (2011). The four items examine the level of enjoyment and reward drawn from work. A total score is computed based on the simple sum of responses. In a study with Norwegian teachers, Skaalvik and Skaalvik (2011) found a Cronbach's alpha of .91 for this instrument.

Work-Related Goal Progress Scale

This five-item scale assesses progress at work-related goals. The original instrument was developed by Lent et al. (2005), but did not focus precisely on goals of the work field. Duffy and Lent (2009) adapted the original instrument to assess progress at specific work-related goals.

In addition to narrowing the scope of assessment to the work domain, to avoid confusion, the adapted instrument also asks participants to consider just the most important work-related goal as they respond to the questionnaire (Duffy & Lent, 2009). The five items that comprise this scale are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A total score is computed based on the simple sum of responses. Duffy and Lent found an internal consistency reliability estimate of .86 for this instrument.

Work-Related Goal Support Scale

Duffy and Lent (2009) modified the scale developed by Brunstein et al. (1996) that measured marital partner goal support. The modified instrument assesses the degree to which teachers feel supported by their fellow teachers, immediate supervisors, and school administrators in the pursuit of their work-related goals (Duffy & Lent, 2009). This scale is comprised of six items. These items are rated on a 7-point Likert scale ranging from 0 (completely disagree) to 6 (completely agree). A total score is computed based on the simple sum of responses. Duffy and Lent found the internal consistency reliability estimate of .61 for teacher support, .71 for supervisor support, and .82 for administrative support. For the current study, participants were asked to assess the support given by school administrators only.

Ohio State Teacher Efficacy Scale

This instrument assessed teachers' beliefs about their ability to perform three main aspects of teachers' practice: instructional strategy, student engagement and classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). The Ohio State Teacher Efficacy Scale is comprised of 12 items, which are rated on a 9-point Likert scale ranging from 1 (nothing) to 9 (a great deal). A total score is computed based on the simple sum of responses. According to Tschannen-Moran and Woolfolk Hoy, this scale has a reliability of .90. Construct

validity was provided by positive correlations with existing measures of personal teaching efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Positive and Negative Affect Scale

Positive Affect will be measured by the Positive Affect items of the Positive and Negative Affect Scale (Watson et al., 1988). The scale consists of a 20 emotions (10 positive, 10 negative) that are rated on a 5-point Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely). A total score is computed based on the simple sum of responses. In the study of development on this instrument it was found an internal consistency reliability coefficient of .88 for the Positive Affect items (Watson et al., 1988). In testing the integrative model of job satisfaction Duffy and Lent (2009) found a coefficient of .92 for the internal consistency reliability of the Positive Affect items. The validity of the Positive Affect items was demonstrated through negative correlation with depressive symptoms (r = -.36), among other factors (Watson et al., 1988).

Perceived Organizational Support Scale-Short Form

The short form of the Perceived Organizational Support Scale was used to assess the degree to which Brazilian teachers experience favorable work conditions (Eisenberger et al., 1986). The short form of this measure consists of an 8-item survey. The items are rated on a 7-point Likert scale ranging from 0 (strongly disagree) to 6 (strongly agree), and inquire about the level of appreciation, value, and care of the organization toward the worker. A total score is computed based on the simple sum of responses. The original form of this instrument had internal consistency reliability ranging from .80 to .93 (Eisenberger et al., 1986). It was also found to significantly correlate with absenteeism (r = -.28) (Eisenberger et al., 1986).

While work conditions include three major dimensions as explained in the previous chapter, for the current study work conditions will be assessed exclusively through the dimension of perceived organizational support as it is measured by the short form of the Perceived Organizational Support Scale. The assessment of work conditions through only one of its dimension is congruent with the study conducted by Lent et al. (2011) already reported in the literature review.

Data Analysis Procedures

Descriptive statistics were used to answer research question 1 regarding the characteristics of Brazilian teachers that are associated with the main variables of this study. Descriptive statistics included analysis of frequency, analysis of variance (ANOVA), *t*-test and Pearson Product-Moment Correlation. Path analysis was used to answer questions 2 and 3. Path analysis "identifies the degree to which predictor variables interact with each other and contribute to the variance of the dependent variables" (Gay, Mills & Airasian, 2009, p. 345). The results of a path analysis created a diagram in which it was possible to see the direct and indirect effect of the predictor variable on the other variables of the study. In addition to that, Cronbach's alpha was calculated to assess the internal consistency reliability of the translated version of the scales used in this study.

Summary

This chapter presented the methods used to answer the research questions that guided this correlational study. The research questions of this study were: (1) Which demographic and professional characteristics of Brazilian teachers are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness? (2) To what extent does loneliness predict teachers' job satisfaction directly and

indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy? (3) To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness? Using the snowball sampling strategy, this study was limited to teachers who were teaching in any grade from kindergarten to high school in private and/or public schools in Brazil. Data was collected via an online survey using a set of measures translated into Portuguese and self-administered by the participants. Data analysis procedures included descriptive statistics and path analysis. The next chapter will present in detail the results of this study.

Chapter IV

Results

This study had two main goals. The first one was to identify the characteristics of Brazilian teachers that appear associated with teachers' job satisfaction, teachers' self-efficacy, goal progress, goal support, work conditions, positive affect and loneliness. The second one was to test the overall fit of the teachers' job satisfaction models proposed in this study. To achieve the goals of this study the following research questions were addressed:

1. Which demographic and professional characteristics of Brazilian teachers are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness?

2. To what extent does loneliness predict teachers' job satisfaction directly and indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy?

3. To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness?

To answer these research questions, a national convenience sample of Brazilian teachers teaching any grade in basic education from public and private schools were invited to answer the survey and to identify additional participants who would fit the inclusion criteria. The questionnaire was also sent to teachers' unions. A cover letter asked them to include the link for the questionnaire in their newsletters.

Chapter 4 presents descriptive statistics of the data collected as well as the results of the quantitative analysis, and is divided into four sections: (a) population and descriptive findings, (b) instrumentation, (c) investigation of assumptions as relates to inferential analysis, and (d)

application of the inferential analysis results to the research questions of the study. SPSS v20.0 was used for the descriptive findings, comparative analyses (*t*-tests, ANOVA) and correlational analysis addressing research question 1. MPlus v7.0 was used to perform the path analyses addressing research questions 2 and 3. All inferential analyses were tested at the 95% level of significance.

Population and Demographics of Study Participants

The study included Brazilian teachers who were currently teaching any grade from kindergarten through high school in any of the five geographical regions in Brazil. The criteria for inclusion in this study were the following: (a) currently teaching, (b) teaching in a private and/or public school in Brazil, (c) teaching in any grade from kindergarten to high school, (d) and older than 18. Of the 1,345 records collected for the study, 64 records did not meet the inclusion criteria. Eighty-seven of the records were also removed from the dataset because none of the survey questions were completed by these respondents. Therefore, a total of 151 records were removed from the dataset and the remaining 1,194 records were retained for analysis.

In terms of general demographics, the participants primarily consisted of females (70%). The majority of the teachers ranged from 20 to 49 years of age (88%). For over two-thirds (69%) of the teachers, their monthly income was less than R$3,000 (approximately US$ 1,500). Over one-fourth of the teachers taught in the Northeast region of Brazil (27%), while 34% of the teachers taught in the Southeast region of Brazil. The majority of the teachers were in a relationship (74%). The teachers were almost evenly distributed between those who had attended a private college (47%) and those who had attended a public college (51%). A vast majority of teachers obtained a college degree or a post-college degree (87%). Table 5 presents the frequency and percentages of the demographic variables of the study.

Table 5

Frequencies and Percentages of Demographic Variables of Study (n = 1,194)

Variable	Frequency	Percent
Age		
Younger than 20	10	0.8
20 to 29	296	24.8
30 to 39	478	40.0
40 to 49	276	23.1
50 to 59	114	9.5
60 or older	16	1.3
No response	4	0.3
Gender		
Female	830	69.5
Male	351	29.4
No response	13	1.1
Monthly income		
Less than R$ 1,000	100	8.4
R$ 1,000 to R$ 1,999	350	29.3
R$ 2,000 to R$ 2,999	369	30.9
R$ 3,000 to R$ 3,999	203	17.0
R$ 4,000 to R$ 4,999	80	6.7
R$ 5,000 to R$ 5,999	36	3.0
R$ 6,000 or more	44	3.7
No response	12	1.0
Geographical region		
North	121	10.1
Northeast	327	27.4
South	189	15.8
Southeast	411	34.4
Central west	138	11.6
No response	8	0.7
Relationship status		
In a relationship	885	74.1
Not in a relationship	301	25.2
No response	8	0.7
Type of college attended		
Private	565	47.3

Public	604	50.6
No response	25	2.1
Highest degree achieved		
High school	18	1.5
College degree	420	35.2
Specialization	616	51.6
Master's degree	105	8.8
Doctoral degree	24	2.0
No response	11	0.9

Regarding professional characteristics of the participants of this study, over half of the teachers have taught for 10 years or less (55%). The majority of the teachers taught in public schools (76%). Approximately two-thirds of the teachers were teaching only one grade level (64%). The number of absences among most teachers due to health reasons in the first semester of 2013 ranged between 0 and 3 (85%). Approximately two-thirds of the teachers were working less than 40 hours per week (61%). Over half of the teachers have taught in only one school (55%). Table 6 presents the frequency and percentages of the professional descriptive variables of the study.

Table 6

Frequencies and Percentages of Professional Variables of Study (n = 1,194)

Variable	Frequency	Percent
Years of teaching experience		
1 to 5 years	367	30.7
6 to 10 years	289	24.2
11 to 15 years	223	18.7
16 to 20 years	132	11.1
More than 20 years	177	14.8
No response	6	0.5
Type of school presently teaching in		
Private	153	12.8

Public	906	75.9
Both	129	10.8
No response	6	0.5
Grade levels taught		
Kindergarten	137	11.5
Fundamental	373	31.2
High School	239	20.0
Kindergarten & fundamental	80	6.7
Kindergarten & high school	3	0.3
Fundamental & high school	327	27.4
All three levels	23	1.9
No response	12	1.0
Absences due to health reasons in 2013		
None	568	47.6
1 to 3	443	37.1
4 to 6	96	8.0
7 or more	76	6.4
No response	11	0.9
Number of working hours per week		
Less than 20 hours	145	12.1
20 to 29 hours	317	26.5
30 to 39 hours	267	22.4
40 to 49 hours	372	31.2
50 or more	89	7.5
No response	4	0.3
Number of schools your teach in		
1	658	55.1
2	396	33.2
3	102	8.5
4 or more	34	2.8
No response	4	0.3

Instrumentation

Teachers completed a survey instrument comprised of demographic questions and items relating to variable constructs of seven instruments: (a) The Revised UCLA Loneliness Scale (Portuguese Version) (UCLA), (b) the Teacher's Job Satisfaction Scale (TJS), (c) the Work-Related Goal Progress Scale (WRGP), (d) the Work-Related Goal Support Scale (WRGS), (e)

the Ohio State Teacher Efficacy Scale (TSE), (f) the Positive and Negative Affect Scale (PAS), and (g) the Perceived Organizational Support Scale-Short Form (POS). Table 7 presents measures of central tendency for the variable constructs derived from the instruments utilized in this study.

Table 7

Measures of Central Tendency of Variable Constructs used for Inferential Analysis

Variable	*n*	*M*	*SD*	*Mdn*	Sample Range	Possible Range
UCLA	964	34.89	9.56	34.0	18 - 66	18 - 72
TJS	1095	13.67	4.16	14.0	4 - 20	4 - 20
WRGP	1081	17.98	4.28	19.0	5 - 25	5 - 25
WRGS	1051	19.53	9.34	19.0	0 - 36	0 - 36
TSE	1042	76.11	14.58	77.5	15 - 108	12 - 108
PAS	1041	33.22	9.23	34.0	10 - 50	10 - 50
POS	1126	25.31	11.06	24.0	0 - 48	0 - 48

Note. *M* = Mean; *SD* = Standard Deviation; *Mdn* = Median.

Reliability

Table 8 presents the survey items used to derive each of the seven variable constructs used in this study and Cronbach's alpha coefficients of internal consistency reliability for the seven variable constructs. A Cronbach's coefficient alpha value of .70 or greater indicates good reliability of an instrument with the data collected (Tabachnick & Fidell, 2007). All seven instruments were reliable with the data collected for this study.

Table 8

Cronbach's alpha of Instruments

Variable	Response Items	Cronbach's α
UCLA	59*, 60, 61, 62*, 63*, 64, 65, 66*, 67*, 68, 69, 70, 71*, 72*, 73, 74, 75, 76	.908
TJS	34, 35, 36, 37	.889
WRGP	38, 39, 40, 41, 42*	.835
WRGS	43, 44*, 45, 46*, 47, 48*	.868
TSE	22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33	.919
PAS	49, 50, 51, 52, 53, 54, 55, 56, 57, 58	.938
POS	14, 15*, 16*, 17, 18*, 19, 20*, 21	.849

Note. * Reverse coded item

Inferential Analysis

Assumptions

Statistical analyses of the study included analysis of variance (ANOVA), independent sample *t*-test, and correlations for research question 1, and path analyses for research questions 2 and 3. The dataset was investigated for the inferential analysis assumptions of absence of missing data, absence of outliers, normality, homogeneity of variances, linearity and homoscedasticity, which refers to the property of having similar statistical variances, and the absence of multicollinearity, which can be defined as a high degree of correlation between two predictor variables.

Data were missing for some records across many of the variable constructs used in inferential analysis: 230 records (19%) on the loneliness variable, 99 records (8%) on the

teachers' job satisfaction variable, 113 records (10%) on the goal progress variable, 143 records (12%) on the goal support variable, 152 records (13%) on the teachers' self-efficacy variable, 153 records (13%) on the positive affect variable, and 68 records (6%) on the work conditions variable. SPSS software offers an option of pairwise deletion of records with missing data. Pairwise deletion is a technique that excludes cases only when they are missing data for a particular analysis, but includes the case for all analyses for which they have the needed information (Pallant, 2007). Therefore, to help retain as much power as possible for the study, the cases with the missing information on variables used for a particular inferential analysis were excluded only for that analysis, but the cases were retained for analyses in which they had the available information.

Outliers in a dataset have the potential to distort results of an inferential analysis. A check of box plots for all seven dependent variable constructs was performed to visually inspect for outliers. Six outliers were found on the teachers' self-efficacy variable. Four outliers were found on the goal progress variable. Three outliers were found on the loneliness variable. The variables were standardized to check for the presence of extreme outliers (z = +/-3.3). The outliers were not extreme. A data check of the outliers indicated that they were within the acceptable range of values for the constructs. A check of the mean values and 5% trimmed mean values for the constructs did not indicate a large difference in values. It was therefore determined that all records would be retained for analysis and that the outlier assumption was not violated.

Normality for the scores of the seven variable constructs was investigated with SPSS Explore. The Kolmogorov-Smirnov Test (K-S) for normality indicated that all variables were not normally distributed ($p < .01$). However, the K-S Test is sensitive to larger sample sizes,

with significant findings returned when sample sizes are larger ($n > 50$; Pallant, 2007). A visual check of histograms and Normal Q-Q plots for the seven variable constructs indicated distributions close to normal. A comparison of the mean, 5% trimmed mean, and median relating to each of the seven variable constructs indicated numbers close in value for the measures according to constructs indicating that outliers and skew were not adversely affecting the distribution of the variables. Therefore the assumption of normality was not considered violated and parametric tests were used on the seven variable constructs during inferential analysis.

Assumptions of linearity between study variables and homoscedasticity, requirements for correlational and path analysis, were checked with scatterplots of the data. The assumptions of linearity and homoscedasticity were not violated.

Multicollinearity diagnostics for the path analysis were performed using SPSS via correlational analysis. Multicollinearity may be assumed if a correlation coefficient between two variables is .90 or greater (Pallant, 2007). No violations were noted and the assumption of absence of multicollinearity was met.

Levene's Test of Equality of Variances was performed to investigate violations of the equal variance assumption for the independent samples *t*-tests and the analysis of variance (ANOVA) tests. The assumption of equal variances was violated for the ANOVA analysis involving the independent geographic location groups on the loneliness variable ($p = .018$), teachers' self-efficacy variable ($p = .041$), and the work conditions variable ($p = .021$). SPSS provides a result with adjusted degrees of freedom when the equality of variances assumption is violated via the Welch test, and this result was reported in the findings for the ANOVA analyses with unequal variances. The assumption of equality of variances between the five geographic

regions for the other four variable constructs, teachers' job satisfaction, goal progress, goal support, and positive affect was met. The assumptions of equal variances were met for the three *t*-tests performed in this study.

Inferential Analyses Addressing Research Questions

A series of inferential analyses were performed to address the following research questions:

1. Which demographic and professional characteristics of Brazilian teachers are associated with relation to teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness?

2. To what extent does loneliness predict teachers' job satisfaction directly and indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy?

3. To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness?

The inferential tests and results are reported according to each specific research question of study.

Research Question 1

Research question 1 asked, "Which demographic and professional characteristics of Brazilian teachers are associated with relation to teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness?"

A series of independent sample *t*-tests, analysis of variance (ANOVA), and correlational analyses were performed to address Research question 1.

Independent Samples *t*-tests. A series of 21 independent samples *t*-tests were performed, three for each of the dependent variables of loneliness, teachers' job satisfaction, goal progress, goal support, teachers' self-efficacy, positive affect, and work conditions.

The first series of *t*-tests investigated mean differences for each of the dependent variables between the two independent gender groups of females vs. males. A significant mean difference was found for the dependent variable, "teachers' self-efficacy." Investigation of the means of the teachers' self-efficacy variable for each gender indicated that the female respondents had significantly higher mean scores than the males. Significant findings were not noted for the other six independent samples *t*-tests. Table 9 presents the results for the first series of *t*-tests.

Table 9

Results of Independent Samples T-tests of the Variable Constructs of Study for Mean Differences between Gender Groups of (Female) vs. (Male)

Variable/Group	*n*	*M*	*SD*	Mean Diff.	*SE* Mean Diff.	*t*
Loneliness				-1.00	0.68	-1.48
Female	668	34.61	9.72			
Male	285	35.61	9.22			
Teachers' Job Satisfaction				0.40	0.28	1.45
Female	762	13.80	4.12			
Male	320	13.40	4.19			
Goal Progress				0.46	0.29	1.62
Female	750	18.12	4.16			
Male	319	17.66	4.54			
Goal Support				0.63	0.63	1.00
Female	732	19.76	9.36			
Male	307	19.12	9.19			

Teachers' Self-efficacy				2.98	0.99	3.01**
Female	723	76.93	14.10			
Male	308	73.95	15.55			
Positive Affect				-0.27	0.63	-0.42
Female	726	33.15	9.24			
Male	303	33.42	9.24			
Work Conditions				0.18	0.73	0.26
Female	786	25.36	11.24			
Male	331	25.18	11.67			

Note. ** $p < .01$. *M* = Mean; *SD* = Standard Deviation; *SE* = Standard Error.

The second series of *t*-tests investigated mean differences between each of the dependent variables and the independent variable, "Relationship status." The independent variable "Relationship status" consists of two categories: (a) In a relationship and (b) Not in a relationship. As the results presented in Table 10 show, a significant mean difference was found for the dependent variable of loneliness, indicating that the participants in a relationship had significantly lower mean scores than those not in a relationship. Significant findings were not noted for the other six independent samples *t*-tests.

Table 10

Results of Independent Samples T-Tests of the Variable Constructs of Study for Mean Differences between Relationship Status Groups of (In a Relationship) vs. (Not in a Relationship)

Variable/Group	*n*	*M*	*SD*	Mean Diff.	*SE* Mean Diff.	*t*
Loneliness				-3.53	0.71	-5.00***
In a relationship	720	33.99	9.46			
Not in a relationship	237	37.52	9.37			
Teachers' Job Satisfaction				0.11	0.29	0.38

In a relationship	814	13.69	4.20			
Not in a relationship	273	13.58	4.06			
Goal Progress				0.41	0.30	1.36
In a relationship	804	18.08	4.32			
Not in a relationship	270	17.67	4.17			
Goal Support				-1.05	0.67	-1.58
In a relationship	782	19.29	9.48			
Not in a relationship	262	20.34	8.86			
Teachers' Self-efficacy				0.21	1.05	0.20
In a relationship	780	76.13	14.77			
Not in a relationship	256	75.93	14.05			
Positive Affect				0.21	0.66	0.31
In a Relationship	772	33.26	9.16			
Not in a Relationship	262	33.05	9.47			
Work Conditions				-0.53	0.76	-0.70
In a Relationship	834	25.18	11.18			
Not in a Relationship	287	25.70	10.79			

Note. *** $p < .001$. *M* = Mean; *SD* = Standard Deviation; *SE* = Standard Error.

The third series of *t*-tests investigated mean differences between each of the dependent variables and the independent variable "Type of college attended." The independent variable "Type of college attended" consisted of two categories: (a) Private and (b) Public. A significant mean difference was found for all seven dependent variable constructs.

The results presented in Table 11 show that teachers who attended a private college had significantly lower mean scores of loneliness and significantly higher mean scores of teachers' job satisfaction, goal progress, goal support, teachers' self-efficacy, positive affect and work conditions than those who attended a public school college.

Table 11

Results of Independent Samples T-Tests of the Variable Constructs of Study for Mean Differences between Type of College Attended (Private) vs. (Public)

Variable/Group	*n*	*M*	*SD*	Mean Diff.	*SE* Mean Diff.	*t*
Loneliness				-1.56	0.62	-2.50*
Private	466	34.13	9.44			
Public	476	35.69	9.67			
Teachers' Job Satisfaction				1.37	0.25	5.46***
Private	520	14.38	4.07			
Public	550	13.00	4.15			
Goal Progress				0.57	0.26	2.14*
Private	516	18.27	4.24			
Public	541	17.70	4.33			
Goal Support				2.04	0.58	3.53***
Private	505	20.57	9.39			
Public	526	18.53	9.18			
Teachers' Self-efficacy				3.95	0.90	4.38***
Private	499	78.04	15.01			
Public	523	74.10	13.83			
Positive Affect				2.04	0.58	3.52***
Private	498	34.25	9.27			
Public	520	32.22	9.16			
Work Conditions				1.88	0.66	2.83**
Private	538	26.26	11.16			
Public	567	24.38	10.89			

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. *M* = Mean; *SD* = Standard Deviation; *SE* = Standard Error.

Analysis of Variance (ANOVA). A series of 21 analysis of variance tests (ANOVA) were performed, three sets for each of the dependent variables of loneliness, teachers' job satisfaction, goal progress, goal support, teachers' self-efficacy, positive affect and work

conditions. The first set involved the independent grouping variable of geographic region, the second set included the grouping variable of type of school in which teachers currently work, and the third set included the grouping variable of grade level taught.

Geographical Regions. The first series of seven ANOVA analyses included the independent variable of the five Brazilian geographic regions, which were divided into five cohorts (Cohort 1: North; Cohort 2: Northeast; Cohort 3: South; Cohort 4: Southeast; Cohort 5: Central West) for this series of ANOVA analyses.

Table 12 presents the findings for the ANOVA tests. The results indicate that (a) the mean teachers' job satisfaction score for the South region was significantly higher than the scores for the North region, Northeast region and the Southeast region; (b) the mean goal progress score for the North region was significantly lower than the scores for the South region; (c) the mean goal support score for the South region was significantly higher than the scores for the North region, Northeast region and the Southeast region; (d) the mean teachers' self-efficacy score for the South region was significantly higher than the scores for the Northeast region and the Southeast region; (e) the mean positive affect score for the Northeast region was significantly lower than the scores for the South region; (f) the mean work conditions score for the North region was significantly lower than the scores for South region, Southeast region and the Central West region. The mean work conditions score for the South region was significantly higher than the scores for the Northeast region and Southeast region. Table A1 (Appendix A) presents the Post hoc comparisons using Tukey's HSD Test for each group of ANOVA test.

Table 12

Results of ANOVA Findings for Seven Variable Constructs of Study as Relates to Geographic Region

Dependent Variable/ Group	*n*	*M*	*SD*	*F*	η^2
Loneliness				0.62	.03
North	99	34.92	8.83		
Northeast	259	35.54	8.79		
South	153	34.05	10.70		
Southeast	341	34.73	9.88		
Central West	105	34.82	9.28		
Teachers' Job Satisfaction				12.32***	.04
North	114	13.11	3.91		
Northeast	294	12.78	4.32		
South	179	15.28	3.87		
Southeast	377	13.47	4.06		
Central West	123	14.43	3.96		
Goal Progress				3.07*	.01
North	112	17.23	3.98		
Northeast	288	17.86	4.29		
South	174	18.83	4.18		
Southeast	378	17.77	4.42		
Central West	122	18.34	4.07		
Goal Support				5.74***	.02
North	108	17.64	8.19		
Northeast	281	18.36	9.55		
South	168	22.10	9.29		
Southeast	368	19.60	9.39		
Central West	119	20.35	8.86		
Teachers' Self-efficacy				9.33***	.03
North	104	77.80	13.20		
Northeast	282	75.16	13.79		
South	169	81.36	14.24		
Southeast	363	73.57	15.72		
Central West	119	77.05	11.90		
Positive Affect				4.04**	.02
North	106	32.15	9.16		
Northeast	282	31.98	9.48		
South	163	35.17	9.51		
Southeast	366	33.18	9.19		
Central West	117	34.47	7.91		

Work Conditions				8.92***	.03
North	113	21.76	9.94		
Northeast	306	23.88	10.82		
South	181	28.65	11.81		
Southeast	391	25.54	11.16		
Central West	130	26.45	9.90		

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. *M* = Mean; *SD* = Standard Deviation.

Type of School. The second series of ANOVA analyses included the independent variable "type of school" with three categories, which were divided into three cohorts (Cohort 1: Private; Cohort 2: Public; Cohort 3: Both). The seven dependent variable constructs used were loneliness, teachers' job satisfaction, goal progress, goal support, teachers' self-efficacy, positive affect and work conditions.

The results for this series of ANOVA tests are presented in Table 13. The results indicate that (a) the mean of the loneliness score for the Public school was significantly higher than the scores for the Private schools and the combination of both schools; (b) the mean teachers' job satisfaction score for the Private school was significantly higher than the scores for the Public schools and the combination of both schools; (c) the mean goal progress score for the Private school was significantly higher than the scores for the Public schools and the combination of both schools; (d) The mean goal support score for the Private school was significantly higher than the scores for the Public schools; (e) the mean of the teachers' self-efficacy score for the Public school was significantly lower than the scores for the Private schools and the combination of both schools; (f) the mean positive affect score for the Public schools was significantly lower than the scores for the Private schools and the combination of both schools; (g) the mean of the work conditions score for the Private school was significantly higher than the scores for the

Public schools and the combination of both schools. Table A2 (Appendix A) presents the Post hoc comparisons using Tukey's HSD Test for each group of ANOVA test.

Table 13

Results of ANOVA Findings for Seven Variable Constructs of Study as Relates to Education Group

Dependent Variable / Group	*n*	*M*	*SD*	*F*	η^2
Loneliness				7.23***	.01
Private	128	32.79	10.12		
Public	725	35.55	9.49		
Both	106	32.89	8.86		
Teachers' Job Satisfaction				24.25***	.04
Private	143	15.77	3.71		
Public	826	13.24	4.16		
Both	120	14.11	3.96		
Goal Progress				16.58***	.03
Private	142	19.78	3.96		
Public	815	17.61	4.23		
Both	119	18.35	4.45		
Goal Support				7.17***	.01
Private	138	22.30	9.99		
Public	796	19.07	9.08		
Both	112	19.69	9.73		
Teachers' Self-efficacy				24.30***	.04
Private	137	82.65	13.36		
Public	785	74.35	14.39		
Both	116	79.84	14.49		
Positive Affect				16.96***	.03
Private	135	37.04	8.72		
Public	787	32.34	9.22		
Both	114	34.64	8.65		
Work Conditions				23.16***	.04
Private	144	30.98	11.28		
Public	854	24.32	10.90		
Both	125	25.51	10.03		

Note. *** $p \leq .001$. *M* = Mean; *SD* = Standard Deviation.

Grade Level Taught. The third series of seven ANOVA analyses included the independent variable "grade level taught." The grade levels taught were divided into four cohorts (Cohort 1: Kindergarten; Cohort 2: Fundamental; Cohort 3: High School; Cohort 4: More than 1 grade level) for every series of ANOVA analyses.

The results of the seven one-way between groups ANOVAs are presented in Table 14. The results suggest that (a) the mean of teachers' job satisfaction scores for those teaching Kindergarten was significantly higher than the scores for those teaching High School and for teachers who taught more than one grade level; (b) the mean goal progress score for those teaching Kindergarten was significantly higher than the scores for those teaching more than one grade level; (c) the mean teachers' self-efficacy score for those teaching Kindergarten was significantly higher than the scores for those teaching Fundamental, High School and more than one grade level. Table A3 (Appendix A) presents the Post hoc comparisons using Tukey's HSD Test for each group of ANOVAs.

Table 14

Results of ANOVA Findings for Seven Variable Constructs of Study as Relates to Grade Level Taught Group

Dependent Variable / Group	*n*	*M*	*SD*	*F*	η^2
Loneliness				1.42	.00
Kindergarten	106	34.20	10.68		
Fundamental	296	35.56	9.63		
High School	194	35.49	9.51		
More than 1 grade level	359	34.27	9.23		
Teachers' Job Satisfaction				4.31**	.01
Kindergarten	120	14.80	4.10		

Fundamental	343	13.81	4.22		
High School	215	13.40	4.14		
More than 1 grade level	406	13.33	4.08		
Goal Progress				3.76*	.01
Kindergarten	114	19.10	3.75		
Fundamental	340	18.05	4.14		
High School	217	17.98	4.71		
More than 1 grade level	399	17.59	4.25		
Goal Support				2.04	.01
Kindergarten	114	21.28	9.52		
Fundamental	331	19.66	9.16		
High School	206	18.64	9.27		
More than 1 grade level	390	19.35	9.41		
Teachers' Self-efficacy				6.08***	.02
Kindergarten	114	81.27	12.37		
Fundamental	330	76.17	14.51		
High School	207	74.72	14.30		
More than 1 grade level	384	75.11	15.07		
Positive Affect				1.53	.00
Kindergarten	113	34.54	9.44		
Fundamental	328	33.50	9.16		
High School	208	33.23	8.90		
More than 1 grade level	382	32.56	9.39		
Work Conditions				1.28	.00
Kindergarten	126	26.82	11.61		
Fundamental	350	25.33	11.03		
High School	228	24.42	11.60		
More than 1 grade level	114	25.24	10.58		

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. *M* = Mean; *SD* = Standard Deviation.

Correlational Analysis. A series of Pearson's product moment correlations were performed to compare bi-variate associations of the inferential analysis variables if the variables were continuous or dichotomous. However, if either of the variables in a pair were ordinal in level, then Spearman's Rank Order correlation was used in lieu of Pearson's product moment correlations (Pallant, 2007). Table 15 presents the findings of the correlational analyses.

Correlations with absolute values of .10 to .29 are considered weak, .30 to .49 are moderate, and .50 to 1.0 are strong (Pallant, 2007). The results returned many weak yet significant correlations. Significance on the weak correlations was most likely due to the size of the data set, which can be considered large. Larger datasets will return significant findings on smaller effects (Tabachnick & Fidell, 2007).

Strong positive correlations were found between the following variables: (a) Monthly income and age; (b) work conditions and goal support; (c) teachers' self-efficacy and teachers' job satisfaction; (d) teachers' self-efficacy and positive affect; (e) teachers' job satisfaction and goal progress; (f) teachers' job satisfaction and positive affect; (g) goal progress and positive affect. A positive relationship suggests that as the values increase or decrease on one variable, values of the other variable move in a like manner.

Table 15

Correlations for Bi-Variate Relationships of Variables Utilized for Inferential Analysis.

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Age													
2.	Monthly income	.283***												
3.	Highest degree achieved	.134***	.310***											
4.	Yrs. teaching exp.	.669***	.374***	.222***										
5.	Number of absences	-.019	.005	-.037	.007									
6.	Hours per week	.119***	.354***	.081***	.232***	.162***								
7.	No. of schools teach in	.013	.231***	.119***	.109***	.099***	.317***							
8.	Loneliness	-.041	-.147***	-.072*	-.096***	.149***	-.010	-.013						
9.	Teachers' Job S.	.098***	.099***	.088***	.126***	-.251***	-.027	-.091***	-.359***					
10.	Goal Progress	-.025	.107***	.171***	.041	-.190***	-.020	-.083***	-.326***	.575***				
11.	Goal Support	.039	.087***	.024	.048	-.193***	-.015	-.096***	-.326***	.443***	.397***			
12.	Teachers' Self-efficacy	.074*	.058	.088***	.179***	-.104***	.065*	-.067*	-.323***	.501***	.467***	.297***		
13.	Positive Affect	.025	.057	.044	.062*	-.252***	-.097***	-.085***	-.452***	.660***	.608***	.373***	.579***	
14.	Work Conditions	.021	.080***	.013	.046	-.226***	-.051	-.099***	-.363***	.463***	.361***	.718***	.320***	.417***

Note. * $p < .05$; *** $p < .001$. *Sample size (n) ranges from 964 to 1,194.*

Further Exploration. In terms of professional characteristics, the series of *t*-tests and ANOVAs found that the type of college attended, the type of school presently taught in, and the grade level taught yielded significant differences in teachers' job satisfaction, indicating that teachers who attended private colleges, those teaching in private schools, and those teaching at kindergarten level were more satisfied than their counterparts. These results indicated the need for further exploration of the data to answer two questions: (a) Are private school teachers more satisfied with their jobs than public school teachers regardless of grade level taught? (b) Are private school teachers more satisfied with their jobs than public school teachers regardless of the type of college attended?

To answer these questions, two series of *t*-tests were conducted. The first series of *t*-tests was conducted separately with each of the grade level groups (kindergarten, fundamental, and high school teachers), and investigated mean differences for job satisfaction between private and public school teachers. Among kindergarten teachers, a significant mean difference for teaches' job satisfaction [t (197) = 3.21, p = .002] indicated that the kindergarten teachers at private schools reported significantly higher job satisfaction (M = 4.09, SD = .80) than did their counterparts in public schools (M = *3.58*, SD = 1.02). Similarly, among fundamental teachers, those teaching in private schools (M = 3.91, SD = .96) reported significantly higher job satisfaction than did those teaching in public schools (M = 3.28, SD = 1.03), t (657) = 5.17, p = .000. A similar pattern was found among high school teachers (M = 3.81, SD = 1.01 at private schools and M = 3.17, SD = 1.02 at public schools), t (461) = 4.25, p = .000.

The second series of *t*-tests investigated mean differences for teachers' job satisfaction between private and public school teachers with two different groups; the first group was comprised of teachers who attended a private college and the second, of teachers who attended a

public college. Among those who attended a private college, private school teachers were significantly more satisfied with their job (M = 4.07, SD = .846) than were public school teachers (M = 3.44, SD = 1.05), t (462) = 5.42, p = .000. The same pattern was found for those who attended a public college; private school teachers were more satisfied (M = 3.64, SD = 1.05) than were those teaching in public schools (M = 3.18, SD = 1.02), t (498) = 2.75, p = .006.

Research Question 2

Research question 2 asked, "To what extent does loneliness predict teachers' job satisfaction directly and indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy?"

A path analysis was performed to address Research question 2. The path diagram of the hypothesized model is presented in Chapter 2, Figure 1. Mplus v7 was used to run the full hypothesized path model for the outcomes of teachers' job satisfaction with both the direct and indirect effects of loneliness. Figure 5 presents the standardized path coefficients and associated standard errors obtained for the hypothesized model. The hypothesized model converged. However, fit indices did not indicate a good model fit. The relative χ^2 value, also referred to as the normed χ^2 value, was computed by dividing the χ^2 index value for the test of model fit by the model degrees of freedom (1434.07/10 = 143.41). A value of 5 or less is considered a good model fit (Schumacker & Lomax, 2004). The root mean square error of approximation (RMSEA) value of .347 was also higher than the desired cut-off value of 0.05 (Hugh & Bentler, 1999). The confirmatory fit index (CFI) of the model was .518. A CFI value of .90 or larger is desirable for indication of good model fit (Hugh & Bentler, 1999). Finally, the standardized root mean square residual (SRMR) of 0.204 was above the desirable cut-off value of 0.05 for a good model fit (Yu & Muthen, 2002). Based on the model fit statistics, the hypothesized model was

not acceptable for approximating the covariance matrix. Therefore inferences using parameter estimates of the hypothesized model results could be misleading due to biased standard errors and effects (Tabachnick & Fidell, 2007).

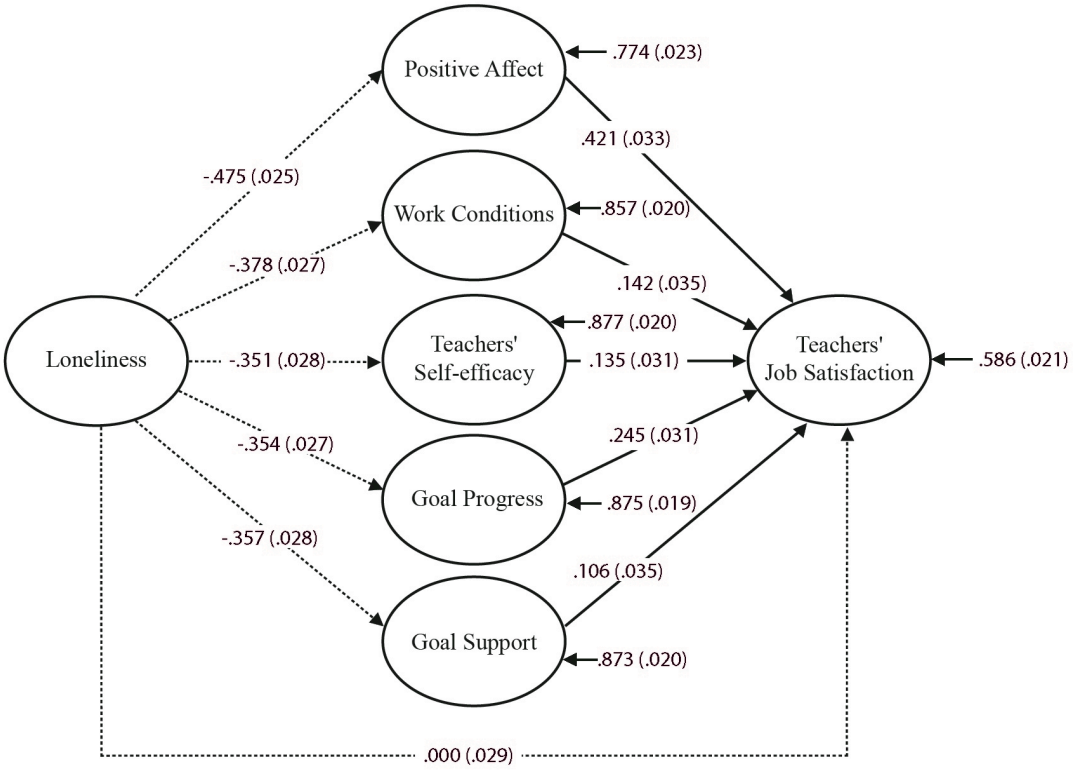

Figure 5. Hypothesized Model of Research Question 2.

Model modifications were performed by first removing variable relationships with non-significant regression model coefficients. Secondly, Mplus provides a listing of model modification indices that can be used to modify the model in order to encourage a better fit. However, one must be careful not to over-fit the model to the data set of study. The researcher

therefore investigated non-significant regression coefficients and model fit indices to determine which variable relationships would improve the fit indices, while also keeping in mind that theory supersedes model adjustments of a computer program.

The variable of loneliness was not a significant direct predictor of teachers' job satisfaction ($\beta < .0005$, $SE = .029$; $p = .993$). Indirect effects of loneliness on teachers' job satisfaction via the other five model variables were small, and the total effects between the indirect paths were contributed mostly by the intervening variables. Modification indices were used to investigate possible variations in the model to produce the best fit while keeping with theory. The final modified model removed the loneliness variable and included a direct path from goal support to work conditions and goal progress. A small yet significant correlation was modeled between teachers' job satisfaction and goal support. Figure 6 presents the standardized path coefficients and associated standard errors of the modified model.

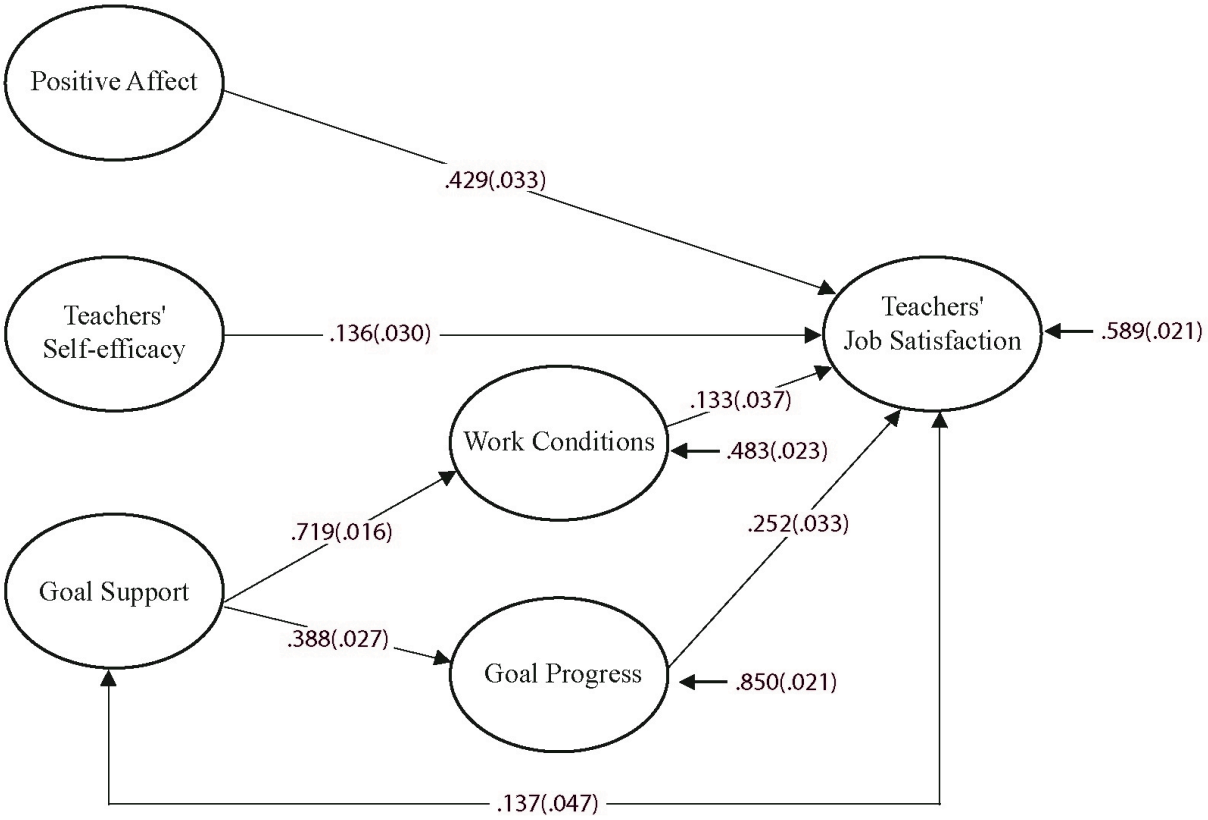

Figure 6. Modified Model of Research Question 2.

The modified model was an improved fit over the hypothesized model. The relative χ^2 value was computed by dividing the χ^2 index value for the test of model fit by the model degrees of freedom (578.27/7 = 82.61). The RMSEA value of .288 was also higher than the desired cut-off value of .05. The CFI of the model was .715, which was below the recommended value of .90 or larger. Finally, the SRMR of 0.235 was above the desirable cut-off value of 0.05 for a good model fit. The standardized model coefficients and associated standard errors for the modified model are presented in Table 16.

Direct Effects. Increasing values of positive affect and teachers' self-efficacy were predictive of greater teachers' job satisfaction. Similarly, increasing values of goal support were

predictive of greater goal progress and better work conditions. A small yet significant correlation was found between the teachers' job satisfaction and goal support.

Indirect effects. The indirect effect of the mediated relationship between goal support and teachers' job satisfaction was statistically significant. Teachers' job satisfaction and goal support were mediated by goal progress and work conditions.

Table 16

Standardized Model Coefficients, Standard Errors, and Associated p-values of the Modified Path Model for Research Question 2.

Type / Variable (Y)	Variable (X)	*β*	SE β	*p*
Directional (Y on X)				
Teachers' Job Satisfaction				
	Work Conditions	.133	.037	<.0005
	Teachers' Self-efficacy	.136	.030	<.0005
	Goal Progress	.252	.033	<.0005
	Positive Affect	.429	.033	<.0005
Goal Progress (WRGP)	Goal Support	.388	.027	<.0005
Work Conditions (POS)	Goal Support	.719	.016	<.0005
Correlational (Y with X)				
Teachers' Job Satisfaction	Goal Support	.137	.047	.003
Teachers' Job Satisfaction R^2 = .589				
Goal Progress R^2 = .850				
Work Conditions R^2 = .483				

Research Question 3

Research question 3 asked, "To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness?"

A path analysis was performed to address Research question 3. The path diagram of the hypothesized model is presented in Chapter 2, Figure 2. Mplus v7 was used to run the full hypothesized path model for the outcome of teachers' job satisfaction with both the direct and indirect effects (with the mediator variable of loneliness) of positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy. Figure 7 presents the standardized path coefficients and associated standard errors obtained for the hypothesized model.

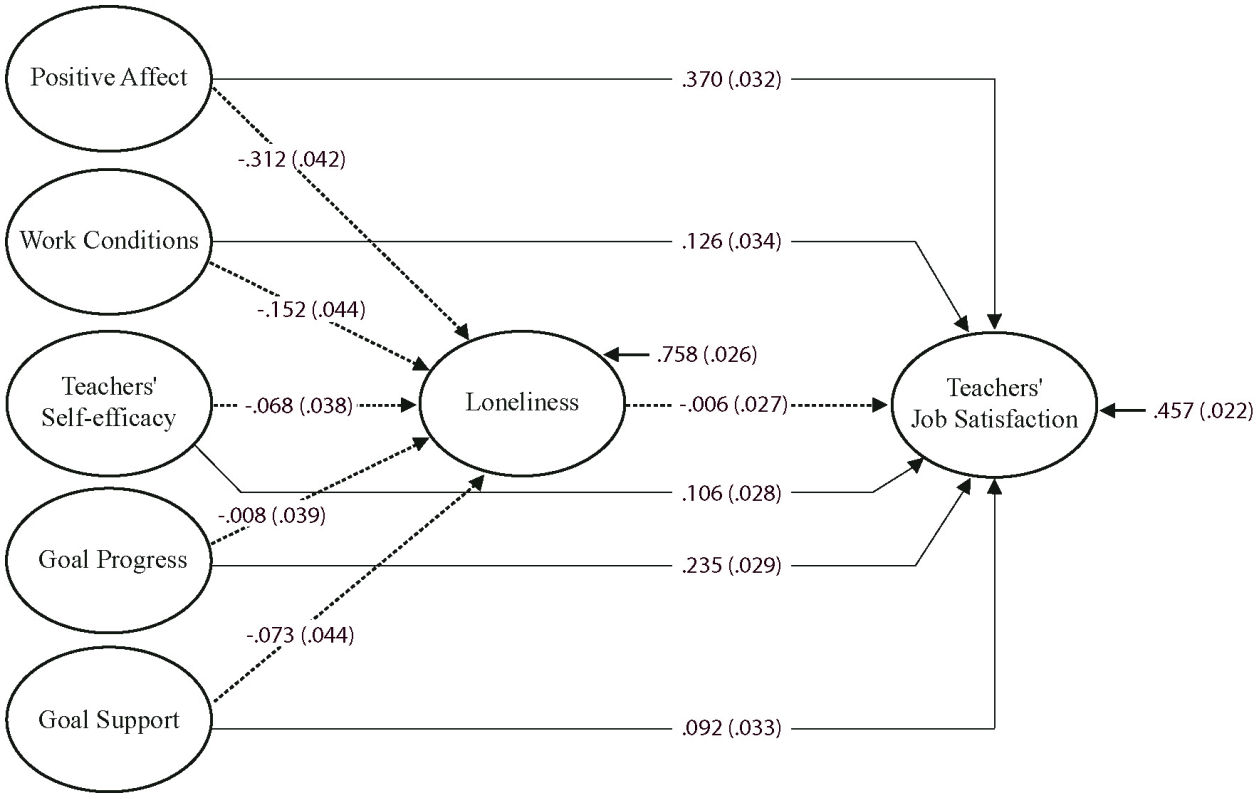

Figure 7. Hypothesized Model of Research Question 3.

The hypothesized model converged. However, it was just-identified and fit indices were not available to judge the model fit. Inspection of the standardized coefficients indicated that the loneliness variable was not a significant direct predictor of teachers' job satisfaction (β = -.006, SE β = .027; p = .816), and also was not a significant intervening variable for the indirect effects of the five variables of positive affect, work conditions, teachers' self-efficacy, goal progress, or goal support. The loneliness variable was removed from the model, resulting in a multiple regression model with the five predictors of positive affect, work conditions, teachers' self-efficacy, goal progress, and goal support, and one dependent variable of teachers' job satisfaction. Figure 8 presents the path model of the multiple regression.

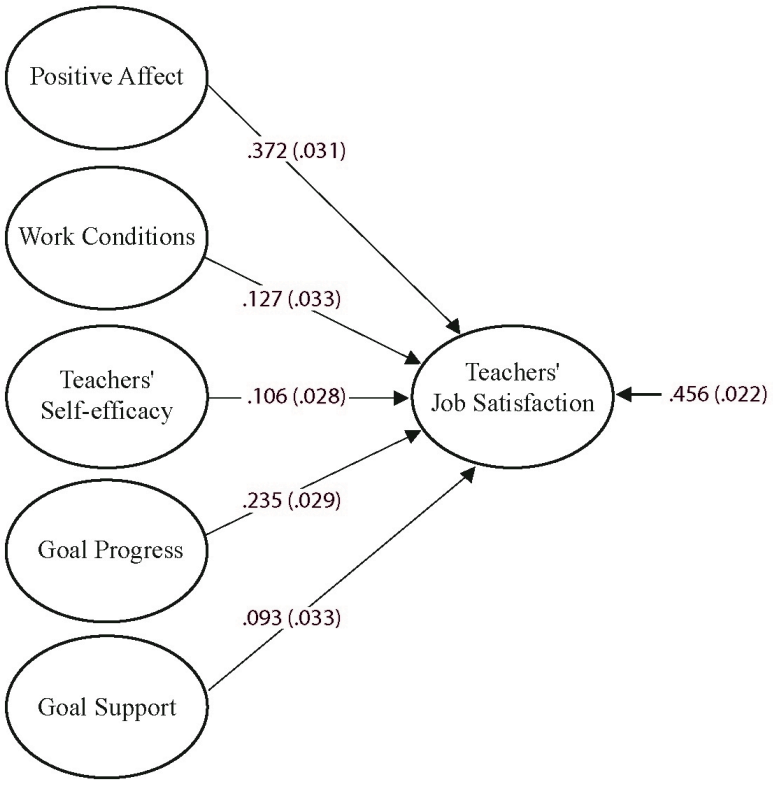

Figure 8. Modified Model of Research Question 3.

This model was also just-identified and fit indices were not computed. The variable of goal support had a very small direct effect on the teachers' job satisfaction outcome, although the relationship was statistically significant (β = .093, SE β = .033; p = .005). The square semi-partial correlation for the goal support variable indicated that goal support contributed less than 0.5% to the dependent variable which measured total job satisfaction of the teachers. Further modifications of the model led to the modified path model of Research question 2 (see Figure 6 and Table 16). Table 17 presents the findings of the multiple regression model for teachers' job satisfaction regressed on the five independent variables of positive affect, work conditions, teachers' self-efficacy, goal progress, and goal support.

Table 17

Multiple Linear Regression Model of Teachers' Job Satisfaction Regressed on Path Model Predictors

Variable	*B*	*SE B*	*β*	*t*	*p*	95% CI for *B* Lower	95% CI for *B* Upper
Work Conditions	-0.382	0.533	.127	3.806	<.0005	0.023	0.664
Teachers' Self-efficacy	0.047	0.012	.106	3.728	<.0005	0.014	0.072
Goal Progress	0.030	0.008	.235	7.916	<.0005	0.172	0.046
Goal Support	0.229	0.029	.093	2.818	.005	0.013	0.286
Positive Affect	0.041	0.015	.372	11.576	<.0005	0.139	0.070
Constant	0.168	0.014	---	---	---	---	---

Model Summary
F = 213.45
R^2 = .544
Adj. R^2 = .541
Sig. = < .0005

Summary

Chapter 4 began with a description of the demographics of the participants in the study. Following the report of demographics, instrumentation and inferential analysis variable constructs were briefly defined. Information pertaining to required assumptions for the inferential analyses was presented and discussed.

Following the demographic and assumption sections, inferential analyses were performed to investigate the three research questions of study. For research question 1, inferential analyses via a series of independent samples *t*-tests indicated significant findings. Significant mean differences were found between gender and the teachers' self-efficacy variable, and relationship status and the loneliness variable. A significant mean difference was also found between the type of college attended and all seven of the variables.

In the first series of analysis of variance (ANOVAs), significance was found between the dependent variable constructs and the independent variable, geographic regions. The teachers' job satisfaction scores in the South region were higher than in the North, Northeast, and Southeast regions. The Central West job satisfaction scores were also higher than those in the Northeast. The goal progress scores were lower in the North region than the South region. The goal support scores were higher in the South region than the North, Northeast, and Southeast regions. The Teachers' Self-efficacy scores were higher in the South region than the Northeast and Southeast regions. The positive affect scores were also higher in the South region than in the Northeast region. The work conditions scores were higher in the South region than the North region.

In the second series of analysis of variance (ANOVAs), significance was found between the dependent variable constructs and the independent variable "school presently teaching in."

The teachers' job satisfaction, goal progress, and work conditions scores were significantly higher in private schools than in public schools, and higher than the combination of both types of schools. The teachers' self-efficacy and positive affect scores were significantly lower in public schools than in private schools and the combination of both types of schools. The loneliness scores were significantly higher in public schools than in private schools as well as the combination of both types of schools. The goal support scores were significantly higher in private schools than public schools.

In the third series of analysis of variance (ANOVAs), significance was found between the dependent variable constructs and the independent variable "grade level taught." The teachers' job satisfaction scores for those teaching Kindergarten were significantly higher than the scores for those teaching High School and more than one grade level. The goal progress scores for those teaching Kindergarten were significantly higher than the scores for those teaching more than one grade level. The teachers' self-efficacy scores for those teaching Kindergarten were significantly higher than the scores for those teaching Fundamental, High School and more than one grade level.

Many pairs of the variable constructs scores were significantly correlated. In addition to many moderate but significant correlations among variables, strong and significant correlations were found between age and income, work conditions and goal support, teachers' job satisfaction and self-efficacy, self-efficacy and positive affect, teachers' job satisfaction and positive affect, and goal progress and positive affect.

To clarify the findings for research question 1, regarding the professional characteristics associated with teachers' job satisfaction, further analyses of the data using *t*-tests indicated that

private school teachers are more satisfied with their jobs than public school teachers, regardless of grade level taught and type of college attended.

For research question 2, it was found that loneliness was not a significant direct predictor of teachers' job satisfaction ($\beta < .0005$, $SE\ \beta = .029$). The indirect effects of loneliness in the hypothesized model were all small and the total effects of the mediated relationship of loneliness and the five intervening variables were explained in most part by the intervening variables. Therefore, it is determined that loneliness is not a predictor of teachers' job satisfaction directly or indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy.

Finally, for research question 3 it was found that positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy directly predict teachers' job satisfaction. However, loneliness is not a significant direct or mediating variable on the outcome of teachers' job satisfaction.

The next chapter will present a discussion of the results as well as implications of the findings as they relate to the literature review and further research.

Chapter V

Discussion and Conclusion

This study examined the characteristics of Brazilian teachers that appear to be associated with teachers' job satisfaction, teachers' self-efficacy, goal progress, goal support, work conditions, positive affect, and loneliness. This study also tested the overall fit of the teachers' job satisfaction model proposed in Chapter 2. In doing so, this study used a quantitative approach and a correlational research design to answer the following research questions:

1. Which demographic and professional characteristics of Brazilian teachers are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness?

2. To what extent does loneliness predict teachers' job satisfaction directly and indirectly through positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy?

3. To what extent do positive affect, work conditions, goal progress, goal support, and teachers' self-efficacy predict teachers' job satisfaction directly and indirectly through loneliness?

This chapter summarizes and discusses the results as presented in Chapter 4. The first section of this chapter addresses the demographic and professional characteristics of Brazilian teachers that were found to be associated with the main variables of this study and their implications for the field of educational leadership. Given that the results returned many weak yet significant correlations due to the size of the data set, this chapter is limited to the discussion of those variables that yielded strong associations only. In this chapter special attention is given to characteristics such as the type of college attended, the grade level taught, and the type of school in which participants taught. This chapter continues with a discussion of the teachers' job

satisfaction models tested in this study and the implications of the results for the field of educational leadership. The following section discusses directions for future research. This chapter ends with a summary of the main conclusions of this study.

Demographic and Professional Characteristics of Brazilian Teachers

The special census conducted by the Brazilian government in 2003 revealed that over 30% of the teachers were dissatisfied or very dissatisfied with their jobs (INEP, 2006). To better understand this situation, this study explored the demographic and professional characteristics of Brazilian teachers that are associated with teachers' job satisfaction and its predictors.

Teachers' Job Satisfaction

In terms of job satisfaction, those teachers who attended a private college, or were living in the South region of Brazil, or teaching in private schools or at kindergarten level, reported significantly higher satisfaction than did the other participants. These characteristics partially coincide with the results of the special census of 2003, which showed that teachers in private schools reported higher job satisfaction than those teaching in public schools, and that the teachers from the South region ranked second in job satisfaction (INEP, 2006).

When taking into consideration professional characteristics in order to foster teachers' job satisfaction, it seems of special importance to consider the practices that take place in private schools. The results of analyses clearly indicated that private school teachers are more satisfied with their jobs than public school teachers, regardless of grade level taught and type of college attended. One can argue that, given the fact that teachers in private schools tend to receive higher salaries (Akkari, 2001), this may explain their satisfaction. However, when considering the variable of monthly income this study found only a very weak, albeit significant, correlation between monthly income and job satisfaction. Other factors such as accountability, professional

development though mentoring, identification of professional goals, and support from educational leaders and peers may play an important role in explaining the satisfaction reported by private school teachers. This means that focusing exclusively on environmental factors, such as income, as has been the practice in other research conducted with Brazilian teachers (Folle et al., 2008; Lapo & Bueno, 2003; Penin, 1985), may fall short of telling the full story of such a complex theme. To get a better sense of the factors that may explain job satisfaction, it is important to take into consideration the interplay between demographics and professional characteristics and the predictors of job satisfaction.

Predictors of Teachers' Job Satisfaction

When it comes to the predictors of job satisfaction, the type of college attended seems to play a very important role. Teachers who attended private colleges, which in Brazil are usually associated with students from low-income households and students with lower academic abilities, reported higher scores in goal progress, goal support, self-efficacy, positive affect, and work conditions. They also reported lower levels of loneliness. In terms of geographical regions, teachers from the South region scored higher than teachers from other regions in all of the teachers' job satisfaction predictors, except for loneliness, which did not yield any significant difference. Also, in terms of the type of school in which teachers are currently teaching, teachers working in private schools scored higher on all of the predictors of teachers' job satisfaction than did teachers from public schools. Moreover, teachers working in public schools reported a higher level of loneliness. Those who teach at kindergarten level also scored higher in goal progress than did those teaching more than one grade level. In addition to that, kindergarten teachers reported higher teachers' self-efficacy than did those teaching fundamental, high school and more than one grade level.

A gender difference in teachers' self-efficacy was observed, with females reporting higher self-efficacy than did males. This finding comes as a surprise, given that males usually tend to report higher self-efficacy than females regarding their professional practice (Bandura, 1997). However, further research of literature indicated mixed results for studies of gender differences regarding teachers' self-efficacy (Jones, 2011). In fact, Tschannen-Moran and Woolfolk Hoy (2007) asserted that demographic variables, such as race and gender, "have typically not been strong predictors of the efficacy beliefs of teachers" (p. 952).

Differences in relationship status were observed in the scores of loneliness, with teachers in a relationship reporting lower levels of loneliness than those not in a relationship. Variables such as age, monthly income, highest degree achieved, years of teaching experience, number of absences, the number of working hours per week and the number of schools in which participants worked were only weakly associated or not associated with the predictors of job satisfaction.

Research question 1 asked which demographic and professional characteristics of Brazilian teachers are associated with teachers' job satisfaction, positive affect, work conditions, teachers' self-efficacy, goal progress, goal support, and loneliness. The characteristics that answer this question are: the type of college attended, geographical region, the type of school in which teachers work and the grade level taught. While the special census of 2003 showed differences in terms of school type and geographical region (INEP, 2006), it comes as a surprise that teachers who attended private colleges reported higher job satisfaction and also scored higher in all of the predictors of job satisfaction, except for loneliness, than those who attended public colleges.

Attending a private college in Brazil usually means that the students' financial situation did not allow them to pay for a private high school, and their academic performance was not good enough to place them in the prestigious public universities where they would not have to pay tuition. It may sound contradictory that those who attended a private college reported higher teachers' job satisfaction than those who attended a public university. This does not seem to make sense. However, it is possible to assume that the very fact that someone who came from a low socioeconomic status and made it through college, would feel satisfied having a stable job and being able to educate the next generations. Adding this to the fact that those who teach in private schools feel more satisfied with their jobs than those teaching in public schools, it is possible to assume that for those who attended a public primary and/or public secondary school, and made it through a private college, teaching in a private school may mean a professional achievement for which they feel personally proud, giving them a larger sense of job satisfaction. This possibility sounds reasonable, especially given the fact that the teaching profession in Brazil mostly attracts students from low socioeconomic status and those with the worst scores in the national exams (Louzano et al., 2010). But it cannot be forgotten that private schools also have a higher demand for accountability; teachers are supposed to show positive results and present themselves in a good manner. This continuous demand may simply lead teachers from private schools to experience the social desirability response bias that is common for those answering self-report measures (Adams et al., 2005; Marlowe & Crowne, 1961). Further research is required to explain the why teachers who attended private colleges reported higher job satisfaction than those who attended public universities.

As noted a few paragraphs above, given the fact that private schools tend to pay higher salaries, one may assume that this is a main factor that leads to teachers' job satisfaction. In

addition to a very weak correlation between monthly income and job satisfaction found in this study, it is important to take into consideration that private schools also tend to have a higher demand for accountability, which many times may be seen in better working conditions, professional support, and opportunities for professional development and closer relationships, elements related to the predictors of teachers' job satisfaction. This is just one of many possibilities. However, this raises a challenge to educational leaders to identify those characteristics of private schools that foster teachers' job satisfaction, and to develop creative and enabling ways to implement them at their own schools.

It was also surprising to find that those teaching at kindergarten level scored higher in teachers' job satisfaction than those teaching in high school as well as those who taught more than one grade level. However, further research of the literature indicated a pattern of higher job satisfaction among those teaching lower grade levels (Bumgartner, 2013; Collier, 1992; Fussell, 2002; Sirk, 1999). While the reasons for such findings are not yet identified, some speculation may provide some insights for future studies. Considering that kindergarten teachers in Brazil work in a more playful environment, teach only one or two groups of students for a whole year and therefore have the possibility of developing a closer relationship with parents and students, have access to palpable results of their work, and are not exposed to the demands of heavy delivery of content and assessment, it is possible to see how these and many other factors may contribute to their job satisfaction. This becomes clearer when, for example, we compare kindergarten teachers with high school teachers, who rotate in many classrooms in a single day and have very tight deadlines to deliver an enormous amount of content. Such situations can put high school teachers in a kind of automatic mode, repeating the same content class after class without knowing the names of the students sitting in front of them. However, the specific

reasons why Brazilian kindergarten teachers reported higher levels of job satisfaction remain to be investigated.

The results of this study also contribute to the field of educational leadership in creating a profile of those teachers with both higher and lower levels of job satisfaction in a developing country, as this study explored so many demographic and professional characteristics from a sizeable national sample. Along these lines, this study also provides a variety of possibilities for researchers and educational leaders to tackle the complex theme of job satisfaction. Finally, these results also can be read as another step toward a more integrative way of addressing problems that can have a high cost for educational leaders, teachers and families.

Teachers' Job Satisfaction Models

Lent and Brown (2006) developed an integrative social cognitive model of job satisfaction that included environmental and personal factors as predictors of job satisfaction. Given the broad array of negative conditions and behaviors that appear associated with loneliness (e.g., Adam et al., 2006; Cacioppo & Patrick, 2008; Hawkley & Cacioppo, 2007; McManus, 2011), this study followed the logic that if a variable can impact aspects of an individual's life such as cognition, health behaviors, and social relationships, it should also have some effect on a person's professional life. This is why this study tested two models that added loneliness to the five other predictors of job satisfaction identified by Lent and Brown (2006). In the first model, loneliness predicted teachers' job satisfaction directly and indirectly through positive affect, work conditions, self-efficacy, goal progress and goal support. In the second model, loneliness was tested as a mediator of these five factors and job satisfaction. These two models respectively illustrated research questions 2 and 3.

According to the findings of this study, the answer to research question 2 is that loneliness does not directly or indirectly predict job satisfaction. Despite the moderate and significant correlations between loneliness and the individual variables job satisfaction, positive affect, work conditions, self-efficacy, goal progress and goal support separately (as shown on Table 15), when analyzed as a predictor within a model, loneliness did not present significant coefficients. Similarly, in the analysis of the second model (research question 3), loneliness yielded very low scores as a mediator of the five predictors and as a direct predictor of teachers' job satisfaction. Alternative models that best fit the data in predicting teachers' job satisfaction did not include loneliness.

Nevertheless, research question 3 also inquired about the predictive power of the other variables. As Figure 8 shows, all five predictors had a significant direct effect on job satisfaction. Positive affect was the variable with the largest impact on teachers' job satisfaction in the hypothesized models for research questions 2 and 3, and also in the modified models for those research questions. In previous tests of Lent and Brown model, this variable was also found to be a significant predictor of job satisfaction, as was work conditions (Badri et al., 2013; Duffy & Lent, 2009; Lent et al., 2009). Surprisingly, in both modified models, work conditions contributed less to teachers' job satisfaction than did goal progress. In fact, in both modified models, goal progress had a stronger effect on job satisfaction than did work conditions. Goal progress and positive affect were the stronger predictors of job satisfaction in the three tests of the Lent and Brown model (Badri et al., 2013; Duffy & Lent, 2009; Lent et al., 2009). This comes as a surprise given the previous tests of the Lent and Brown model in which goal progress failed to predict job satisfaction in two of the three tests. From the three tests of Lent and Brown's model presented in chapter 3, self-efficacy also failed two of the tests (Badri et al.,

2013; Duffy & Lent, 2009; Lent et al., 2009). However, in this study self-efficacy was found to be a significant predictor of teachers' job satisfaction even though its contribution was very small in predicting it. Goal support, however, while significant, had a very small effect in predicting teachers' job satisfaction. In fact, in the modified model for research question 2, goal support was simply presented as an indirect predictor of job satisfaction and as a variable weakly correlated to teachers' job satisfaction. This finding is supported by two tests of the Lent and Brown (2006) model, one conducted by Duffy and Lent (2009) and the second one by Badri et al. (2013), in which goal support did not predict work satisfaction directly.

In addition, the modified model of research question 2 calls attention to the fact that goal support is a very strong predictor of work conditions, which is also suggested by the Lent and Brown model. This may be due to the fact that the variable "work conditions" was assessed using only the Perceived Organizational Support Scale-Short Form (Eisenberger et al., 1986), which, similar to the Work-Related Goal Support Scale (Duffy & Lent, 2009), assesses the support from leaders and peers. But this is not the biggest surprise revealed by the modified model of research question 2. When compared with the modified model of research question 3, it indicates the power of the interactions among the predictors of teachers' job satisfaction. In the modified model of research question 3, in which positive affect, work conditions, teachers' self-efficacy, goal progress and goal support predict teachers' job satisfaction directly, the total variance on teachers' job satisfaction was 45.6%. However, when work conditions and goal progress mediates the impact of goal support, the total variance on teachers' job satisfaction increased to 58.9%.

The interaction among these five predictors, some mediating the impact of the other predictors on job satisfaction, is a feature of the Lent and Brown model, and that may be one of

the reasons why the tests of that model performed in the United States and in Saudi Arabia accounted respectively for 75% and 82% of job satisfaction (Badri et al., 2013; Duffy & Lent, 2009).

The mediation of work conditions and goal progress in the impact of goal support on teachers' job satisfaction presented in the modified model of research question 2 is supported by the Lent and Brown model. This mediation means that the support received from educational leaders can impact the way teachers feel about their jobs because, for instance, if teachers receive support for their working goals they are more likely to make progress toward them, and those teachers who make progress in the pursuit of their professional goals are more likely to experience higher satisfaction with their jobs. Similarly, receiving support may increase the odds that they will perceive their work conditions more favorably, and feel more satisfied with their job.

The theoretical framework that informs this study also supports such interactions. As explicated in Chapter 2, social cognitive theory holds as a basic tenet that environmental and personal factors influence each other (Bandura, 1986). Reinforcing the importance of taking into consideration the reciprocal rather than the isolated influence of the variables, when developing predictive models of teachers' job satisfaction, may be the most important contribution of this study to the body of knowledge on job satisfaction. This contribution echoes the recommendations made by Duffy and Lent (2009) to avoid assessing predictors "in isolation from one another" (p. 221).

This brings us back to the hypothesized model of research question 2, which included loneliness as a direct and an indirect predictor of teachers' job satisfaction, and which accounted for 58.6% of the total variance on teachers' job satisfaction. While loneliness is clearly not a

direct predictor of teachers' job satisfaction, it does have an impact on the five predictors of teachers' job satisfaction. As seen on Figure 5, loneliness has the largest impact on positive affect, which has the largest impact on teachers' job satisfaction in all models presented in this study. Following from what was previously stated about the reciprocal influence of environmental and personal factors in the realm of the social cognitive theory, the main contribution of this study to the theory of loneliness is not only the findings indicating that loneliness does not have a direct impact on teachers' job satisfaction, but in pointing to the exploration of interactions between loneliness and other factors that may have an impact on one's individual professional life.

When it comes to the implications of these results for the field of educational leadership, especially in order to develop creative interventions to increase teachers' job satisfaction or simply to further research, it should be said that despite the small power in predicting teachers' job satisfaction, no variable should be ignored. However, given the high impact of positive affect and goal progress in predicting teachers' job satisfaction among Brazilian teachers, these could be the pillars upon which interventions could be developed. And while the exploration of these two variables can be useful, it is important to conduct further research in order to identify other predictors of teachers' job satisfaction.

Limitations

There were some limitations to this study. First, the instruments that were used for assessment were self-report measures. Research (Adams et al., 2005; Marlowe & Crowne, 1961) has shown that self-report measures have a greater likelihood for social desirability response bias. This bias leads people to present themselves in the best possible way, answering questions in a way that makes them look good. Second, this study was based on descriptive statistics,

correlations and means differences, focusing on the relationship between loneliness and demographical characteristics of participants and also on the assessment of loneliness as a predictor of job satisfaction. While the current design limited the results regarding causality, it was appropriate to meet the purpose of the study. Third, because participation in this study demanded the use of the Internet, and while Internet access has been growing in Brazil, teachers who live in small towns where Internet access is limited were more likely to be prevented from taking part in this study. Fourth, sampling may have been biased toward those who are more social because data collection was based on the volunteers' social network. Fifth, the snowball sampling technique that was used in this research may have resulted in the recruitment of individuals who do not meet the participation criteria of this study. However, demographic information was used to screen out respondents who do not meet the participation criteria. In addition, the fact that no incentives were offered is likely to have reduced the possibility of individuals answering the survey in spite of not meeting the participation criteria.

A word is also to be said about the characteristics of the sample. While the 2003 census reported that men accounted for 14.8% of the teachers (INEP, 2006), 29.4% of the participants of this study were males. While this may suggest a change that reflects the economic growth that Brazil experienced in the last decade, it is very likely that this study oversampled male teachers. Another difference worthy of consideration is the number of participants from the Central West. Teachers from that region accounted only for 6.22% of the participants in the 2003 census (INEP, 2006); in this study they reached 11.6% of the total number of participants, a clear case of oversampling.

Future Research

The results of this study open a series of possibilities for future research in order to further the understanding of the themes examined here. This section presents suggestions for further research in two main themes explored in this study: teachers' job satisfaction and loneliness.

Research on Teachers' Job Satisfaction

Given what is already known about the predictors of teachers' job satisfaction, future research is necessary to develop and test practices that increase teachers' job satisfaction through the increase of its predictors. For example, a line of research might explore the concept of goal progress and test ways to help teachers develop work-related goals and progress on them, and assess how it impacts teachers' job satisfaction. The point here is to explore creative ways to take advantage of the information that is already available in order to improve teachers' job satisfaction.

While the modified model for research question 2 accounted for 58.9% of the variance in teachers' job satisfaction, which provides a good lead in what needs to be taken into consideration in order to increase teachers' job satisfaction, there are still other unknown variables that may have a large impact on teachers' job satisfaction to be identified and included in a broader integrative model. In doing so, it is relevant to keep in mind the efforts based on a socio-cognitive perspective to overcome the dichotomy between environmental and personal factors. Both sets of factors should be taken into consideration, as well as their interactions in directly predicting and also in mediating teachers' job satisfaction. This line of research that aims to identify other variables that contribute to job satisfaction can be a very generative field of research.

In the specific realm of educational leadership, this effort to identify other predictors of teachers' job satisfaction may lead to the exploration of the role of leadership style on teachers' job satisfaction. Very recent studies (e.g., Leary et al., 2013; Liu, Siu & Shi, 2010; Smith, Bryan & Vodanovich, 2012) have already pointed to the association between leadership style and job satisfaction. In addition to that, the very exploration of some predictors of teachers' job satisfaction includes the activities or attitudes of the leaders. Take for example, work conditions. One of the three dimensions of the construct refers specifically to the support, appreciation and care received from the organization, and who is to foster such conditions in the work place if not the leader? If teachers' self-efficacy is also taken into consideration, it is possible to see that three of the four sources of self-efficacy (i.e., mastery experience, vicarious learning and verbal persuasions) presented by Bandura (1997) have to do with the role of the leader. A leader can provide teachers with systematic and meaningful opportunities for professional development, evaluative feedback that stresses personal capabilities, and a role model from which teachers can learn. The attempt to use the information that is already available to improve teachers' job satisfaction can be also a way to evaluate which types of leadership are required to achieve optimal results. The role of leadership style in predicting teachers' job satisfaction seems to be a pressing issue to the researchers in the field of leadership style concerned with this topic.

Research has shown that job satisfaction is an important factor in teachers' attrition and absenteeism (Perrachione, Petersen & Rosser, 2008; Sargent & Hannum, 2005; Skaalvik & Skaalvik, 2011). It seems logical to assume that students from low socioeconomic status will experience a greater impact from attrition and absenteeism because they do not have the means to change schools or to attend a private school. This is to say that the negative impacts of low job satisfaction among teachers ultimately are a matter of social justice. The larger theme of

social justice could also serve as a frame for the exploration of the theme of teachers' job satisfaction—again, not only exploring the consequences of low job satisfaction but also possibilities of increasing students' learning opportunities and academic success.

Research on Loneliness

The logic that the negative impacts of loneliness on cognition, behavior, health and social relationships may also impact professional life leads to the examination of loneliness on the professional life of a specific group of workers. However, as the results of this study showed, teachers' job satisfaction does not seem to be the most appropriate way to explore the impacts of loneliness on the professional realm. If it is true that the experience of loneliness impacts affect, biology and cognition, impairing the individual's ability to self-regulate (Cacioppo & Hawkley, 2009; Cacioppo & Patrick, 2008), it must be true that this experience has some kind of impact on an individual's professional life. No one leaves this kind of problem behind when they go out to work. The big challenge is to identify the variables of the professional field that may show the impact of loneliness. Once these variables are identified, it will be possible to build a body of literature on the impact of loneliness in the professional field. This may ultimately lead to creative ways to reduce this impact and thereby ameliorate the individual's quality of life and, in the specific case of teachers, the quality of their work with students, peers and leaders.

The results regarding loneliness in this study showed that teachers working in public schools scored higher in loneliness. The fact deserves further exploration. There is a need to find answers to questions such as: 1) What are the structural characteristics of public schools that foster the experience of loneliness? 2) What are the structural characteristics of public schools that attract lonely individuals? 3) What are the impacts of teachers' loneliness on their students? 4) How can educational leaders help lower loneliness? Like teachers' job satisfaction, these

questions about loneliness can also be explored through the lenses of social justice, especially because loneliness seems to affect teachers who work in public schools, possibly impacting students who already have their academic possibilities reduced due to a series of problems within the public educational system.

Summary

This chapter summarized and discussed the results presented in Chapter 4. The first section of this chapter discussed the demographic and professional characteristics of Brazilian teachers that were found to be associated with teachers' job satisfaction. While the results indicated that teachers working in private schools or teaching at kindergarten level or who attended private colleges or who lived in the South of Brazil are more satisfied with their jobs, further analysis indicated that private school teachers are more satisfied with their jobs regardless of grade level taught and type of college attended. This chapter also presented the demographic and professional characteristics associated with the predictors of teachers' job satisfaction. The type of school in which they teach, the geographical region, and the type of college attended were associated with all the predictors of teachers' job satisfaction. The grade level taught was associated only with goal progress and teachers' self-efficacy.

This chapter continued with a discussion of the teachers' job satisfaction models tested in this study, concluding that loneliness did not fit any of the modified tested models. This result suggests that loneliness is not a mediator and neither a direct or indirect predictor of job satisfaction. Modified models that best fitted the data and included only positive affect, work conditions, teachers' self-efficacy, goal progress and goal support as predictors were presented and discussed in the larger context of educational leadership.

The following section of this chapter presented the limitations of this study, which included the use self-report measures, a bias toward more social individuals, and a possible oversampling of males and teachers from the Central West region. Finally, the directions for future research in the field of teachers' job satisfaction and loneliness were discussed. They included the identification of other predictors of teachers' job satisfaction using a socio-cognitive perspective, the exploration of leadership styles as possible predictors of job satisfaction, and a series of questions regarding the impact of loneliness on teachers that deserve further exploration.

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Appendix

Appendix

Table A1

Results of Post Hoc Comparisons of ANOVA Findings for Seven Variable Constructs as Relates to Geographic Region via Tukey's Highly Significant Difference (HSD) Test

Dependent Variable / Cohort (I)	Cohort (J)	Mean Difference (I – J)	*SE*	*p*
Loneliness				
North	Northeast	-0.62	1.13	.982
North	South	0.87	1.23	.955
North	Southeast	0.19	1.09	1.000
North	Central West	0.10	1.34	1.000
Northeast	South	1.49	0.98	.544
Northeast	Southeast	0.81	0.79	.843
Northeast	Central West	0.72	1.11	.967
South	Southeast	-0.68	0.93	.949
South	Central West	-0.77	1.21	.969
Southeast	Central West	-0.09	1.07	1.000
Teachers' Job Satisfaction				
North	Northeast	0.33	0.45	.948
North	South	-2.17	0.49	<.0005
North	Southeast	-0.36	0.44	.924
North	Central West	-1.32	0.53	.095
Northeast	South	-2.50	0.39	<.0005
Northeast	Southeast	-0.69	0.32	.190
Northeast	Central West	-1.65	0.44	.002
South	Southeast	1.81	0.37	<.0005
South	Central West	0.85	0.48	.381
Southeast	Central West	-0.96	0.42	.157
Goal Progress				
North	Northeast	-0.63	0.47	.676
North	South	-1.60	0.52	.018
North	Southeast	-0.54	0.46	.764
North	Central West	-1.10	0.56	.277
Northeast	South	-0.97	0.41	.127
Northeast	Southeast	0.09	0.33	.999

Northeast	Central West	-0.47	0.46	.841
South	Southeast	1.06	0.39	.054
South	Central West	0.49	0.50	.866
Southeast	Central west	-0.56	0.44	.710
Goal Support				
North	Northeast	-0.72	1.05	.959
North	South	-4.46	1.14	.001
North	Southeast	-1.96	1.01	.300
North	Central West	-2.71	1.23	.177
Northeast	South	-3.74	0.90	<.0005
Northeast	Southeast	-1.24	0.73	.442
Northeast	Central West	-1.99	1.01	.281
South	Southeast	2.51	0.86	.030
South	Central West	1.75	1.11	.512
Southeast	Central West	-0.76	0.97	.937
Teachers' Self-efficacy				
North	Northeast	2.64	1.64	.492
North	South	-3.56	1.78	.270
North	Southeast	4.23	1.59	.061
North	Central West	0.75	1.92	.995
Northeast	South	-6.20	1.39	<.0005
Northeast	Southeast	1.59	1.14	.629
Northeast	Central West	-1.89	1.57	.746
South	Southeast	7.79	1.33	<.0005
South	Central West	4.30	1.71	.089
Southeast	Central West	-3.48	1.51	.145
Positive Affect				
North	Northeast	0.18	1.05	1.000
North	South	-3.02	1.15	.065
North	Southeast	-1.03	1.01	.848
North	Central West	-2.32	1.23	.327
Northeast	South	-3.20	0.90	.004
Northeast	Southeast	-1.21	0.73	.462
Northeast	Central West	-2.49	1.01	.098
South	Southeast	1.99	0.86	.145
South	Central West	0.70	1.11	.970
Southeast	Central West	-1.29	0.98	.677
Work Conditions				
North	Northeast	-2.12	1.20	.396
North	South	-6.89	1.31	<.0005
North	Southeast	-3.78	1.17	.011
North	Central West	-4.69	1.40	.008

Northeast	South	-4.77	1.02	<.0005
Northeast	Southeast	-1.66	0.83	.272
Northeast	Central West	-2.57	1.14	.162
South	Southeast	3.11	0.98	.014
South	Central West	2.19	1.26	.406
Southeast	Central West	-0.92	1.11	.922

Note. *SE* = Standard Error of the Mean Difference.

Table A2

Results of Post Hoc Comparisons of ANOVA Findings for Seven Variable Constructs as Relates to Education Group via Tukey's Highly Significant Difference (HSD) Test

Dependent Variable / Cohort (I)	Cohort (J)	Mean Difference (I – J)	*SE*	*p*
Loneliness				
Private	Both	-0.10	1.25	.997
Public	Private	2.76	0.91	.007
Public	Both	2.66	0.99	.020
Teachers' Job Satisfaction				
Private	Public	2.53	0.37	<.0005
Private	Both	1.66	0.50	.003
Public	Both	-0.87	0.40	.075
Goal Progress				
Private	Public	2.17	0.38	<.0005
Private	Both	1.43	0.52	.018
Public	Both	-0.74	0.41	.171
Goal Support				
Private	Public	3.24	0.86	<.0005
Private	Both	2.62	1.18	.069
Public	Both	-0.62	0.94	.786
Teachers' Self-efficacy				
Private	Both	2.81	1.80	.262
Public	Private	-8.30	1.32	<.0005
Public	Both	-5.48	1.42	<.0005
Positive Affect				
Private	Both	2.40	1.16	.096
Public	Private	-4.70	0.85	<.0005
Public	Both	-2.30	0.91	.032
Work Conditions				
Private	Public	6.65	0.98	<.0005
Private	Both	5.47	1.33	<.0005
Public	Both	-1.19	1.04	.488

Note. *SE* = Standard Error of the Mean Difference.

Table A3

Results of Post Hoc Comparisons of ANOVA Findings for Seven Variable Constructs as Relates to Grade Level Taught Group via Tukey's Highly Significant Difference (HSD) Test

Dependent Variable / Cohort (I)	Cohort (J)	Mean Difference (I – J)	*SE*	*p*
Loneliness				
Kindergarten	Fundamental	-1.36	1.08	.593
Kindergarten	High School	-1.29	1.16	.680
Kindergarten	More than 1	-0.07	1.06	1.000
Fundamental	High School	0.07	0.88	1.000
Fundamental	More than 1	1.29	0.75	.316
High School	More than 1	1.22	0.85	.480
Teachers' Job Satisfaction				
Kindergarten	Fundamental	0.99	0.44	.108
Kindergarten	High School	1.40	0.47	.016
Kindergarten	More than 1	1.47	0.43	.004
Fundamental	High School	0.41	0.36	.670
Fundamental	More than 1	0.48	0.30	.399
High School	More than 1	0.07	0.35	.997
Goal Progress				
Kindergarten	Fundamental	1.05	0.46	.105
Kindergarten	High School	1.12	0.49	.106
Kindergarten	More than 1	1.51	0.45	.005
Fundamental	High School	0.07	0.37	.998
Fundamental	More than 1	0.46	0.31	.460
High School	More than 1	0.39	0.36	.698
Goal Support				
Kindergarten	Fundamental	1.62	1.01	.380
Kindergarten	High School	2.64	1.09	.072
Kindergarten	More than 1	1.93	0.99	.208
Fundamental	High School	1.02	0.83	.602
Fundamental	More than 1	0.32	0.70	.968
High School	More than 1	-0.71	0.80	.816
Teachers' Self-efficacy				

Kindergarten	Fundamental	5.10	1.57	.007
Kindergarten	High School	6.55	1.69	.001
Kindergarten	More than 1	6.16	1.54	<.0005
Fundamental	High School	1.45	1.28	.673
Fundamental	More than 1	1.06	1.09	.764
High School	More than 1	-0.39	1.25	.990
Positive Affect				
Kindergarten	Fundamental	1.04	1.01	.730
Kindergarten	High School	1.31	1.08	.618
Kindergarten	More than 1	1.98	0.99	.185
Fundamental	High School	0.27	0.82	.988
Fundamental	More than 1	0.95	0.69	.525
High School	More than 1	0.68	0.80	.830
Work Conditions				
Kindergarten	Fundamental	1.49	1.15	.564
Kindergarten	High School	2.40	1.23	.207
Kindergarten	More than 1	1.58	1.12	.497
Fundamental	High School	0.90	0.94	.771
Fundamental	More than 1	0.09	0.80	1.000
High School	More than 1	-0.82	0.91	.806

Note. *SE* = Standard Error of the Mean Difference.