Social Comparisons in Teachers: Effects on Adjustment and Emotions

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Acknowledgements

Abstract

The present study aimed to investigate the effects of three forms of social comparisons in teachers (downward, horizontal, upward) on measures of burnout, job satisfaction, intentions to quit, and emotions. Findings from a sample of 526 teachers showed upward social comparisons to positively predict job satisfaction, personal accomplishment, enjoyment, and negatively predict emotional exhaustion, depersonalization, intentions to quit, anxiety, and anger. Downward social comparisons were found to positively predict job satisfaction, but also positively predict anger. In contrast, horizontal comparisons were found to have unanticipated negative effects on intentions to quit, emotional exhaustion, personal accomplishment, depersonalization, anger, anxiety, and lower enjoyment. In addition, a cluster analysis revealed seven uniquely profiled groups, with ANCOVAs showing clusters endorsing upward comparisons to demonstrate optimal results. Future research aimed at promoting role models, and differentiating horizontal comparisons ("misery loves company") from more beneficial socially-oriented motivational constructs (e.g., collective self-esteem, relatedness) is encouraged.

Abrégé

L'objectif de la présente thèse était d'étudier, auprès d'une population d'enseignants, les effets de trois types de comparaisons sociales (descendante, latérale, et ascendante) ayant trait à l'épuisement professionnel, à la satisfaction au travail, aux intentions de quitter, ainsi qu'aux émotions. L'échantillon recueilli était composé de 526 enseignants qui ont rempli des questionnaires en ligne évaluant toutes les variables d'intérêt. Les résultats ont révélé que les comparaisons sociales ascendantes sont un prédicteur positif de satisfaction au travail, d'accomplissement personnel et de plaisir au travail, tout en étant un prédicteur négatif d'épuisement émotionnel, de dépersonnalisation, d'intentions de quitter, d'anxiété et de colère. Les comparaisons sociales descendantes se sont avérées être un prédicteur de satisfaction au travail, mais également de colère. À l'inverse, les comparaisons latérales ont eu des effets négatifs non anticipés sur les intentions de quitter, l'épuisement émotionnel, la dépersonnalisation et l'accomplissement personnel. Les résultats ont également indiqué que les comparaisons latérales ont favorisé la colère et l'anxiété tout en réduisant le plaisir au travail. De plus, une analyse par grappes a révélé la présence de sept profils distincts, et des ANCOVAs subséquente ont démontré que le groupe effectuant des comparaisons ascendantes a obtenu les résultats les plus favorables. Il serait souhaitable que de futures études se penchent sur le rôle des enseignants pouvant servir de modèle à d'autres, ainsi que sur les différences entre comparaisons latérales « négatives » (de type « pessimisme contagieux ») et d'autres, plus positives (p. ex., estime de soi collective, sentiment d'appartenance sociale).

Introduction

Teacher motivation is an important predictor of teachers' satisfaction and overall well-being (Neves & Lens, 2005). Whereas ample research has investigated students in the field of achievement motivation, teachers have been overlooked. Additionally, despite abundant research in contemporary educational psychology that has emphasized the significant impact that teachers have on student motivation (Neves & Lens, 2005), little research has looked at teacher motivation. Recently, some attention has been given to certain aspects of teacher motivation, specifically the issue of teacher attrition. In a recent review, researchers found that certain personal characteristics act as predictors of teacher attrition, such as the probabilities of attrition being higher for females, individuals with no graduate training, teachers who have specializations in math or science, and teachers in schools that do not provide opportunities for collaboration and networking (Boreman & Dowling, 2008).

Researchers have also found that teacher attrition has become an epidemic, with an estimated 40% of teachers leaving the teaching occupation within the first five years in Norway (Roness, 2011). Moreover, research in Canada has found that 50% of teachers are leaving the workplace within two years of starting (Kartsenti & Collin, 2013), and in the United States the attrition rates have nearly doubled between 1990 and 2004 (National Commission on Teaching and American's Future, 2009). The literature indicates that the issue of teacher attrition is only getting worse, thus prompting the first aim of this paper to identify psychological causes for potential attrition, namely motivational strategies involving social comparisons, so as to prevent it in new teachers entering the profession.

Explanations for teachers' rapid departure from the workplace include cognitive and psychological factors. Chambers, Cole, and Roper (2002) found a dissonance between teachers'

expectations and the realities pertaining to their jobs, suggesting that teachers underestimate the demands of their work environment and end up feeling unprepared for the heavy workloads that await them in the teaching profession. In addition, teachers are often found to set unreasonable goals and when the burdens become overwhelming they opt to leave (Karsenti & Collin, 2013). Other explanations for teachers' premature departure from the profession include stress experienced due to lack of time, administrative issues, student misbehaviour, student low achievement, lack of student motivation, and heavy workloads (Antoniou, Polychroni & Vlachakis, 2006; Blase, 1986; Karsenti & Collin, 2013; Manassero, Garcia, Buades, Ramix, Vasquez, et al., 2006). Overall, the accumulated stress from these various sources may lead to a teacher's ultimate decision to abandon their profession due to feelings of burnout.

Burnout has been identified as a consequence of occupational stress (Kokkinos, 2007, Kyriacou, 1987; Manassero et al., 2006; McCormick, 1997; McCormick & Shi, 1999) and may occur when an individual lacks adequate coping strategies (Cunningham, 1983) or the psychological resources required to persist when the difficulties of their work become excessive (Schwarzer & Hallum, 2008). Overall, research on burnout suggests that teachers who experience burnout have negative evaluations of themselves as well as low levels of job satisfaction (higher stress contributes to lower job satisfaction; Champlain, 1995). In addition, personality characteristics can explain differences in vulnerability to stress in teachers, such as neuroticism being a predictor of burnout, and conscientious individuals having both lower levels of depersonalization and higher levels of personal accomplishment (Kokkinos, 2007).

As a construct, burnout was first recognized as a "pop psychology" term, due to the top-down approach taken by initial researchers to understanding the relationship between individuals and their jobs. However, given substantial subsequent empirical research as well as the

development of theoretical models regarding burnout, the construct is currently more acceptable in the occupational psychology literature (Maslach, Schaufeli, & Leiter, 2001). The term burnout has been most commonly used to refer to the most prominent model of burnout proposed by Maslach and Jackson (1981). With the development of the Maslach Burnout Inventory (MBI), these authors further solidified this association with this measure having been widely used to evaluate psychological well-being in human service and health care occupations (Mashlach et al., 2001). Over the last 30 years, their model has been used to evaluate burnout in educational settings, with the measurement being further revised for use among individuals who do not work in service occupations. As reflected in the Maslach Burnout Inventory (Maslach, 2003), burnout is operationalized as an individual's response to stress that is comprised of three components: emotional exhaustion, personal accomplishment, and depersonalization. The key aspect of burnout is emotional exhaustion, with this construct referring to psychological and emotional strain, specifically pertaining to interactions with others (Maslach & Jackson, 1981). The second component is personal accomplishment, which refers to feelings of competence. Finally, the third subset is depersonalization, which is synonymous with a loss of empathy and reflects a detached attitude towards co-workers.

As burnout lies at the heart of the discussion on teacher motivation, this paper strives to investigate predictors of burnout, intentions to quit, and job satisfaction by examining motivational strategies that teachers use in response to occupational stress. In accordance with the educational psychological literature, thoughts and emotions are assumed to be strongly related to cognitions, that typically are proposed to influence subsequent affect and behavior (Pekrun, 2010; Weiner, 2000). Specifically, burnout relates to both cognitive factors (perceptions of accomplishment, depersonalization) and emotional variables (feeling emotionally exhausted),

suggesting that both teachers' thoughts and emotions can influence their burnout levels (Byrne, 2004). This relationship is important because the way in which teachers think about their own failures determines future goals, intentions to assist their students, perceptions of self-efficacy, and emotional experiences (Reyna & Weiner, 2001). Thus, in order to better understand the impact of social comparisons as motivational strategies, we also evaluated more specific emotional experiences in teachers as outcomes of their motivational strategies, namely anxiety, anger, and enjoyment (Frenzel, Goetz, Stephens, & Jacob, 2009).

There is burgeoning research on motivational constructs relating to teachers, as evidenced by various studies on teachers self-efficacy, goals, attributions, etc., yet there is little work to date exploring the motivational strategies that teachers use as coping mechanisms to deal with occupational stress. Similar to other motivational constructs, motivational strategies involve expectancies, goals, and values but are more dynamic in involving an intentional response to a situational stressor in which these more basic motivational processes are adaptively regulated. One particular set of self-protective motivational strategies found to predict adjustment and future behavior are social comparisons that involves comparing oneself with others (Suls, Martin, & Wheeler, 2002).

Previous research has found conflicting results with regards to different types of social comparisons made by students and older adults. For example, comparing oneself to individuals who are perceived as being worse-off (downward comparisons) has been found to be beneficial for psychological well-being (Locke, 2003; Lockwood & Kunda, 1997; Stapel & Koomen, 2001) and to protect psychological resources when the likelihood of accomplishing one's goal is low (Heckhausen & Schulz, 1995; Stewart, Chipperfield, Ruthig, & Heckhausen, 2013). However, downward comparisons have also been found to produce negative self-evaluations (Buunk,

Collins, Taylor, & VanYperen, et al., 1990) and have weak effects on psychological adjustment

for individuals facing health challenges (e.g., Hall, Chipperfield, Heckhausen, & Perry, 2010).

On the other hand, by engaging in upward comparisons, one is looking to a role model

for guidance as to how to deal with challenges. Accordingly, upward comparisons have been

found to be associated with greater motivation, particularly when the goal is self- improvement

(Corcoran, Crusius, & Mussweiler, 2011), and are assumed to provide hope and ambition

(Wood, 1989) in allowing individuals to believe that success is attainable (Bailis & Chipperfield,

2006; Lockwood & Kunda, 1997). Finally, horizontal comparisons involve feeling a sense of

belongingness with others who have experienced the same or similar setbacks and have been

found to benefit older adults (collective self-efficacy; Bailis & Chipperfield, 2006; Bailis,

Chipperfield, & Helgason, 2008), with related constructs showing similar benefits among

teachers (e.g., collective teacher efficacy; Skaalvik & Skaalvik, 2010; see also teacher

relatedness in Klassen, Perry, & Frenzel, 2012).

Thus, given the importance of social comparisons as self-protective motivational

strategies that predict both adjustment and future behavior (Suls et al., 2002), the present study

aimed to investigate the effects of three forms of social comparisons specifically in teachers

(downward, upward, and horizontal comparisons) on measures of burnout (emotional

exhaustion, depersonalization, personal accomplishment), intentions to quit, job satisfaction, and

discrete emotions (enjoyment, anger, anxiety). The paper will first provide a literature review to

explain the theories that have guided research on teacher motivation, including Expectancy-

Value theories, Weiner's attribution theory, the Control-Value Theory of Achievement

Emotions, and Frenzel and colleagues' work on teacher emotions. Secondly, social comparison

research will be presented from both educational and psychological perspectives, investigating

prior empirical work on downward social comparisons in students (The Big-Fish-Little-Pond

Effect), horizontal social comparisons in older adults (collective self-efficacy; Skaalvik &

Skaalvik, 2010), and upward social comparisons (role models, modeling) in various populations.

Finally, the results of an empirical study of the effect of social comparisons in teachers will be

presented, in which the effects of downward, horizontal, and upward social comparisons on

adjustment outcomes and emotions will be outlined, followed by a discussion of study

limitations and implications.

Literature Review

Motivation Theories

Whereas previous research in motivation has been concerned with instincts, drives, and

needs (Weiner, 1990), modern motivation theorists examine beliefs, goals, and values (Eccles &

Wigfield, 2002). Traditionally researched motivational predictors of burnout have fallen into two

categories: perceived competence or expectancy, and value-related constructs. One theory in

particular is the Expectancy-Value Theory of motivation (Ames, 1992; Eccles, 1984; Eccles,

Adler, Futterman, Goff, et al., 1983; Eccles &Wigfield, 2002). This theoretical framework

investigates the expectations and importance attached to achievement-related outcomes.

Expectancy-related constructs have frequently been labeled control or ability, and include Self-

Efficacy Theory (Bandura, 1977; Woolfolk Hoy et al., 2009), and perceptions of competence

(Pintrich, 2003), whereas value-related constructs include goals (e.g., mastery vs. ability; Ames,

1992; Butler & Shibaz, 2008), and intrinsic motivation (Self-Determination Theory, Ryan &

Deci, 2000). In addition, there are several theories that have incorporated both expectancy and

value, such as Weiner's Attribution Theory (in terms of emotions, beliefs regarding

controllability, the importance of an event outcome, and the possibility of its reoccurrence), and

Pekrun's Control-Value Theory, which investigates the relationship between achievement

emotions, value, and control as cognitive appraisals. Each motivational process has a role in

keeping individuals motivated (Pintrich, 2003), and in the following section each of the

aforementioned models will be discussed and elaborated upon. In addition, empirical evidence

from educational settings with students and teacher populations will be presented in support of

the theoretical perspectives.

Expectancy-Value Theoretical Framework

Initially developed by Atkinson (1957, 1964), Expectancy-Value Theory is one of the

most prominent theories in the achievement motivation literature in examining achievement-

related behaviours with respect to how individuals strive for success, individuals' choices

between achievement tasks, and task persistence. According to Atkinson, an achievement motive

is a relatively stable force that pushes an individual to attain a desired outcome, while avoiding

undesirable outcomes (Wigfield & Eccles, 1992). He stated that motives relating to achievement,

expectancies for success, and the attractiveness of a specific goal were the determining factors

used to explain achievement-related behaviors. Two other constructs were essential to the model:

expectancy and value. Atkinson (1957) originally defined expectancies as the anticipation of

success or failure following a behavior, and incentive value as the attractiveness of succeeding or

failing - the importance of a task (Wigfield, 1994). Those that have higher expectancies of

success will value the achievement task more.

Eccles and colleagues expanded the original expectancy-value model proposed by

Atkinson (e.g., Eccles,1984; Eccles et al., 1983) in proposing that expectancy and value should

also relate to broader psychological factors, and further, that expectancies and values were

positively related to one another (Atkinson believed them to be inversely related; Eccles &

Wigfield, 2002). In their model, additional critical contributions were that choices were

presumed to be influenced by positive and negative task characteristics, and that the cost

associated with making a choice was critical because once a choice is made, other possibilities

are eliminated (Eccles & Wigfield, 2002). As a consequence, the expectancy for success on

specific tasks, and relative value of each of the options, become vital predictors of one's eventual

choices in educational settings (Eccles & Wigfield, 2002). Expectancies and values are assumed

to influence persistence, performance, and also choice of task, and are further assumed to be

influenced by task-specific beliefs, such as individual's goals, individual's self-schema,

perceptions of competence, and judgments regarding the difficulty of the task. Finally, these

task-specific motivational variables are assumed to be influenced by affective memories,

perceptions of others' expectations of them and previous achievement outcomes (see Figure 1 for

an explanation of their model).

Eccles et al. (1983) identified four key components of value, namely attainment value,

utility value, cost, and intrinsic value. Attainment value refers to personal importance of

succeeding on the given task (Battle, 1966), and engaging in a task so as to affirm one's self-

schema (Markus & Wurf, 1987). Utility value is conditional upon the task being perceived as

monumental to the attainment of one's goals (Eccles & Wigfield, 2002). Cost is defined as the

negative characteristic and opportunity lost from making one choice as opposed to another.

Finally, intrinsic value refers to the enjoyment and the subjective interest one has regarding the

task (a state of flow; Csikszentmihalyi, 1988; Deci & Ryan, 1985). In sum, Expectancy-Value

Theory as initially proposed by Atkinson (1957, 1964) has played a fundamental role in

understanding human behaviour within the field of achievement motivation, Based on this

theory, the following discussion will expand on motivational theories following from this
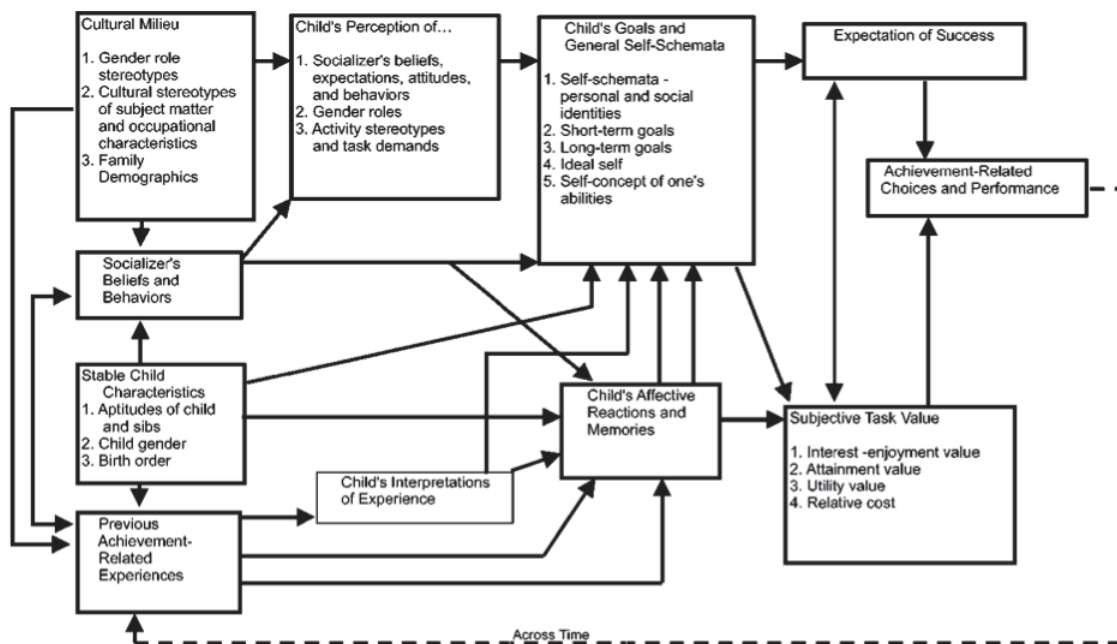
Figure 1. The Eccles et al. Expectancy-Value Model of achievement (Eccles & Wigfield, 2002).

perspective including expectancy theories (self-efficacy), value theories (goals), and those that

incorporate both constructs (Attribution Theory and Control-Value Theory).

Self-efficacy

        Following from the Expectancy-Value Model, a construct reflecting perceived

competence and expectations for future success referred to as self-efficacy has been explored as

an important facet of motivation (Eccles et al., 1983). Indeed, many studies have focused on

individuals' beliefs regarding competence, individual efficacy, success and failure expectancies,

and control over outcomes – all relating to the overarching question, "Can I do this?" (Eccles &

Wigfield, 2002). Specific to this construct, Bandura (1997) proposed the social cognitive model

of self-efficacy, defining it as the level of ability an individual perceives himself or herself to

have. More specifically, he stated that competence was a multidimensional concept that involved

"people's beliefs about their capacities to produce designated levels of performance and exercise

influence over events that affect their lives" (Bandura, 1994, p. 71). In other words, self-efficacy refers to the perceived competence one has to successfully complete a given task. Efficacy expectations vary in magnitude, generality (to situation), and strength (strong expectations are more likely to persevere with regards to coping efforts despite opposing experiences).

Self-efficacy involves two types of expectancy beliefs: outcome expectations and efficacy expectations. Outcome expectations are beliefs that an individual holds regarding the possibility of a successful outcome if the individual makes effort to achieve it. Efficacy expectations refer to beliefs one may hold about efficiently getting a desired outcome. These two types of beliefs differ in that someone can have an outcome expectation (a belief that if effort is exerted, the desired outcome will be reached), but have low efficacy expectations (do not believe they can successfully execute the set of behaviors required to attain the desired outcome efficiently). In addition, expectations alone will not get one their desired outcome if capabilities are lacking (Bandura, 1997).

Expectations of personal efficacy come from performance accomplishments, vicarious experience, verbal persuasion, and physiological states, including emotional arousal, and these dimensions are how people judge their own efficacy (1977). First, performance accomplishments are based on mastery experiences such that successes raise mastery expectations, whereas failures lower them. In succeeding repeatedly, failure events begin to have a weaker impact on expectations. Once self-efficacy has been established, this type of self-efficacy can be generalized to other situations and be extremely beneficial for individuals because they become more confident in themselves. The level of mastery that one obtains is not the only measure of self-efficacy - a more social, evolutionary approach is also taken when individuals watch others

in order to compare and learn. This second source of self-efficacy is called vicarious experience. Expectations of personal performance can be judged and created through watching others.

For example, seeing others perform a task with minimal effort may lead an individual expect that they too can perform the same task utilizing the same amount of effort. These comparisons offer individuals a window into possible outcomes and act as templates for their own actions. Perceived similarity is key when making comparisons to others because when an individual perceives himself or herself as similar, the success and failures of the model directly impact their self-efficacy. More specifically, when the individual assumes there is a high degree of similarity between themselves and the model and when the model is successful, the individuals' levels of self-efficacy increases in thinking they too can also succeed. Third, efficacy beliefs can be derived through verbal persuasion, individuals convincing others that they have the abilities required to attain the desired task. Finally, physiological states, such as stress, can alter individuals' self-efficacy. High emotional arousal typically has negative outcomes; therefore success is normally expected when emotional arousal levels are low.

Bandura (1994) showed that self-efficacy influences four psychological processes. First, self-efficacy influences cognitive processes, such that expectations of personal efficacy should determine if and what coping behaviors are used, and the degree of effort and goal-setting in the face of challenges. Second, self-efficacy impacted motivational processes, namely causal attributions (the higher the self-efficacy, the more likely a controllable attribution was made), achievement values (self-efficacy influences the value an individual places on a task), and achievement goals (people with higher levels of self-efficacy set more challenging goals, and persisted longer to accomplish them). Third, self-efficacy impacts emotional states, in that

individuals with higher self-efficacy reported lower levels of anxiety (Bandura, 1988), due to feelings of control over their outcomes. Finally, self-efficacy influences the selection process where individuals may chose tasks/options that they expect to succeed at. For example, Zimmerman and Cleary (2006) found individuals with higher self-efficacy to set more challenging goals.

Self-efficacy in teachers. Self-efficacy has also been investigated in teachers with respect to its role in their success in achievement settings, particularly with regards to students' learning and engagement (Tschannen-Moran & Woolfolk Hoy, 2001). In accordance with Bandura's view, teachers who have higher levels of self-efficacy put forth more effort on their teaching, challenge themselves to a higher degree, and persist in the face of these challenges for a longer period of time. On the other hand, research has found that teachers with lower levels of self-efficacy tend to be easily irritated (indicating the depersonalization component of burnout), and emotionally exhausted (Skaalvik & Skaalvik, 2009), ultimately resulting in lower levels of job satisfaction. The foregoing discussion implies that self-efficacy is a key component in motivation research, and moreover, may be influenced by both mastery experiences and observing mastery in other individuals through observation (i.e., social comparison). The second component of the expectancy-value literature is value which now be discussed in the following section with respect to achievement goals in students and teachers.

Achievement Goal Orientations

Achievement goals embody the value component in the expectancy-value framework, with many studies showing goals orientations to be an important predictor of persistence, achievement, and adjustment in students and teachers (for a review, see Butler, 2000). In the rapidly growing research literature following from Achievement Goal Theory, researchers have

investigated *why* individuals engage in activities with the aim of arriving at particular

outcomes, finding perceived value to be an important motivational force that draws an individual

to choose a task (Higgens, 2007). In other words, an achievement goal can be defined as a

cognitive representation of a desired possibility to which one subsequently chooses to devote

one's time and attention (Elliot, 1999).

Ames (1992) defined achievement goals as the combination of variables directed towards

an achievement task, emphasising the vital role that the situation had in developing the goal

(Ames & Archer, 1987, as cited in Elliot & Thrash, 2001). Achievement Goal Theory examined

two types of goals: mastery (approach) and performance (approach; Ames 1992; Ames &

Archer, 1988). Mastery goals highlight competence-related behaviours, whereas performance

goals focus on outperforming and displaying competence to others. Later theorists further

elaborated on this theoretical perspective, shifting the emphasis from the *situation* to the *person*.

Accordingly, Dweck and Leggett (1988) identified two new goals: learning-approach goals

(goals involving the task) and performance-approach goals (goals involving the ego; Dweck,

1996; Maehr, 1989, as cited in Elliot & Thrash, 2001).

Next, Elliot (1999) and Pintrich (2001) developed the multiple goal perspective and

added a new dimension: approach vs. avoidance. The resulting 2×2 matrix was thus comprised

of mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance

goals (Elliot & Thrash, 2001). Mastery-approach orientation involves seeking to attain

comprehensive knowledge of a task while consistently improving, whereas a mastery-avoidant

goal orientation reflects attempts to attain maximal knowledge of a task and avoid imperfection.

On the other hand, performance-approach goals involve trying to do better than others, and

performance-avoidance goals involve trying not fall behind and do worse than others so as to keep up desired impressions and personal sense of competence.

Teacher goal orientations. With respect to teachers, Butler (2007) measured work-avoidance goals instead of mastery-avoidance goals, in addition to the traditional mastery orientation (mastery-approach), ability-approach (performance approach), and ability-avoidance (performance-avoidance), in an attempt to apply the general theory of goals from students to occupational settings. She found that teachers with a mastery orientation were more likely to increase their students' competence, whereas teachers with a work-avoidance goal orientation were more likely provide convenient help-seeking opportunities to their students, and teach with as little effort as possible. Teachers who reported ability-approach goals were more likely to "show off" their teaching successes to others, whereas teachers who reported ability-avoidance goals often strived to avoid negative outcomes.

Further evidence supporting Butler's research is found in the work done by Retelsdorf, Butler, Streblow, and Schiefele (2010) who found that teachers with mastery-approach orientations displayed higher levels of intrinsic motivation, were more likely to ask for help, and endorsed mastery-oriented goals in their students. In addition, students who had mastery-oriented teachers felt their teachers were more supportive and more willing to ask for help as issues arose in the classroom. On the other hand, work-avoidance goals were associated with higher risks of burnout in teachers. Finally, teachers who were performance-oriented were less likely to turn to others for help, as doing so would be threatening to their perceived competence (Butler & Shibaz, 2008), with their students also being found to be more likely to cheat on exams. All in all, this evidence shows the importance of studying teachers' goals and particularly the influence

of mastery goals on teacher development (i.e., social comparisons aimed at fostering

instructional mastery).

Weiner's Attribution Theory

Whereas research on expectancy and values has focused mainly on self-efficacy and

goals (respectively), Weiner's Attribution Theory (1985) involves both expectancy and value-

related constructs. Attribution Theory was developed by Bernard Weiner to illustrate how

individuals explain success and failure outcomes in achievement-related contexts. The theory

explains the motivational sequence that takes place starting with causal ascriptions that lead to

psychological consequences and end with behavioral outcomes. According to this model, one

first asks oneself why this event occurred - what caused this particular outcome - primarily when

the event is negative, unexpected, and/or important. Next, causal attributions activate certain

emotional states (anger, for example) that subsequently impact behavioral outcomes.

The theory has two different perspectives: the interpersonal perspective involving

individuals' explanations of events that happened to others, and the intrapersonal perspective that

pertains to judgments concerning events that occurred to oneself (as seen in Figure 2). According

to the interpersonal perspective, a person acts as a judge when attempting to explain the

circumstances of others. More specifically, judgments of responsibility are made that lead to

feelings of anger and sympathy. In contrast, the intrapersonal perspective involves judging the

causes of one's own experiences (Weiner, 1992).

According to Attribution Theory (Weiner, 1985, 1995, 2006), attributions made by

individuals for events that happen to themselves or others can be classified as (a)

internal/external to the individual, also known as the locus on causality, (b) stable/unstable over

time, and (c) personally controllable/uncontrollable. For example, a student's poor performance
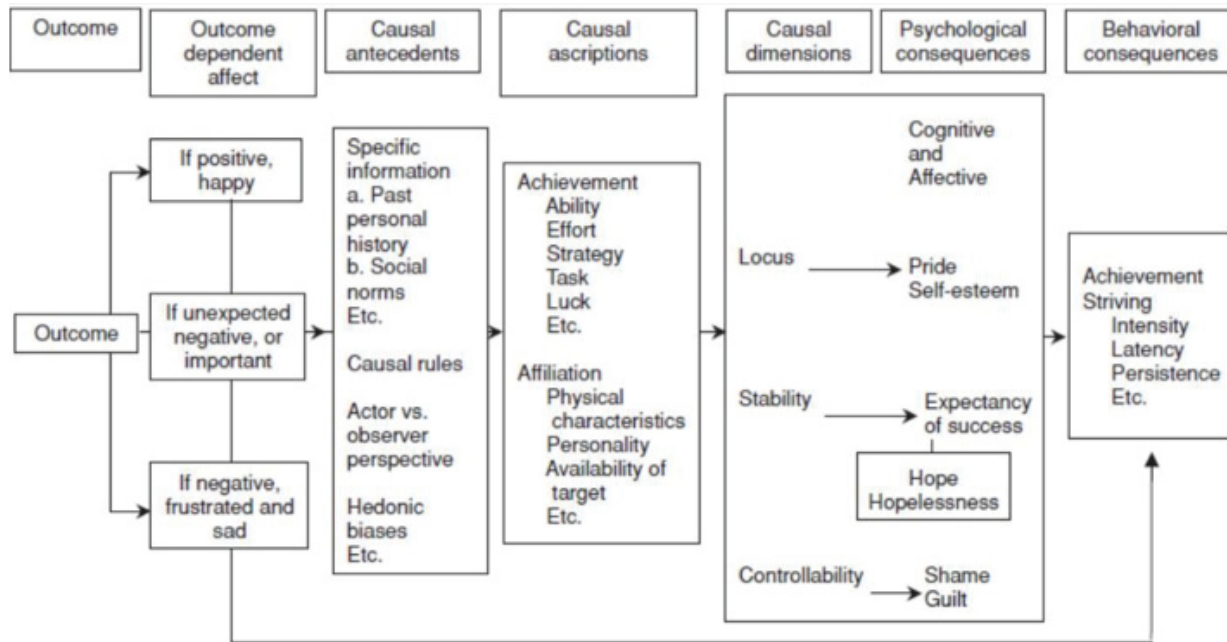
Figure 2. Weiner's Attribution Theory (Weiner, 2010).

can be perceived differently depending on how a teacher attributes the behavior. For example, a

student's poor performance can be viewed as a consequence of one's lack of teaching ability

(internal attribution), or the student being unprepared for the exam (external attribution). The

student's poor performance can also be seen as a random occurrence (unstable attribution), or be

attributed to test difficulty (stable attribution). Finally the teacher can believe that the outcome is

modifiable in the future by him/herself (controllable attribution), or inalterable by him/herself

(uncontrollable attribution).

In addition, research in social psychology has found that in certain cases, individuals may

be biased by whether the event happened to themselves or to others. One such bias is the

fundamental attribution error (Jellison & Green, 1981; Ross, 1977) where individuals tend to

attribute a positive outcome (intrapersonal) to themselves, and negative outcomes to external

factors. Conversely, when evaluating others, individuals will tend to attribute negative attributes

to internal factors, and positive outcomes to external factors.

In educational settings, Weiner's Attribution Theory has been used to assess the academic implications of students' explanations for failure ranging from teacher effectiveness and task difficulty (external), to personal aptitude and effort (internal; Van Overwalle, Segebarth, & Goldchstein, 1989). Students who adopt controllable attributions generally feel better, work harder, and are able to get higher grades as they tend to believe they can improve and assume greater responsibility for their academic outcomes (Hall, Hladkyj, Perry, & Ruthig, 2004, Hall, Perry, Goets, Ruthig, et al., 2007). From the teacher's perspective, the more a student's performance is perceived as within their personal control (e.g., due to lack of teaching effectiveness), the more likely it is that the teacher will take responsibility for this outcome and attempt to help the student improve (Georgiou, Christou, Stavrinides, & Panaoura, 2002).

Attributions in teachers. Teacher motivation research has shown that perceptions of responsibility indeed mediate the reactions that teachers have to negative outcomes (Gosling, 1994; McCormick, & Solman, 1992). More specifically, teachers tend to punish students for 'laziness' that results in negative academic outcomes, because they feel that the students are responsible for their performance (Weiner & Kukla, 1970). Moreover, Reyna and Weiner (2001) found that when undergraduates were asked to play the role of teachers imagining scenarios with students based on vignettes, they were more likely to provide negative feedback to students who failed for controllable reasons (i.e. being lazy, or due to a temporary lack of effort on the given task), than students that failed for uncontrollable reasons. In addition, findings revealed that they were more likely to provide negative feedback to students who failed for stable reasons (being lazy) and uncontrollable reasons (students' low ability), as compared to students who exhibited a temporary lack of effort (controllable, unstable) or were newly transferred to the class (not controllable, unstable). Overall, lazy students were perceived as deserving of the most negative

feedback. Finally, student outcomes that were perceived as personally controllable by the participants tended to cause them to feel angry, whereas uncontrollable outcomes elicited feelings of sympathy that, in turn, negatively predicted retribution.

In Study 2 with real teachers, the results were very similar in showing teachers to be more likely to provide negative feedback to students who failed for uncontrollable reasons. Atlhough no additional interactions found between the attribution dimensions on anticipated student feedback (e.g., controllability and stability), this study nonetheless demonstrates the impact of perceptions of responsibility on teachers' views of their students, and moreover, how these ideas influence their emotional states. In a similar study, Georgiou et al. (2002) found that teacher's thoughts about student failures significantly impacted the way that they treated their students, with causal attributions predicting some teachers wanting to help a failing student, and others rejecting and isolating them from the rest of the class. More specifically, teachers tended to feel pity for students who they believed to have low ability, and felt angry towards students who were perceived as lacking in effort.

In more recent work, Gosling (2004) found that teachers were more likely to attribute a successful outcome to themselves, and failures to students. With regards to student misbehaviors, Kulianna (2007) found similar results showing teachers to refrain from internalizing, or taking responsibility, for student misbehaviors, but instead be more likely to place blame on others. More specifically, teachers tended to blame out-of-school factors, students, as well as the school system for student misbehaviors as opposed to themselves. Moreover, McCormick and Solman (1992) found that teachers tend to attribute negative outcomes to factors that are distal to themselves. For example, teachers rated themselves and peers as less blameworthy for their stress as compared to their school, the government, and other members of society. More

specifically, teachers assign responsibility for their occupational stress primarily to the school

structure (superiors, school organization, and peers), bureaucratic authority (department and

government), and teacher-student relationships (student, society, and oneself). In addition,

teachers believed that the students (issues with students), external factors (government), time

demands (not enough), the school (support from administration), and personal factors (one's own

failings) to contribute to their occupational stress (McCormick & Solman, 1992).

In contrast, Matteucci and Gosling (2004) found that when controlling for age, discipline

taught, and type of school, teachers tended to place responsibility on students who lacked effort,

but blamed themselves for academic failures when the student was perceived as lacking ability.

Moreover, teachers were more likely to pass (vs. fail) students who had low ability in

comparison to students who displayed low effort. Although teachers took some responsibility for

student failures, they attributed more responsibility to students who had no mitigating factors to

explain their failures. Additionally, teachers were more likely to pass (vs. fail) students who had

extenuating factors intervening in their failures. Finally, in a cross-cultural study, it was found

that French teachers held themselves more responsible for student failures, whereas Italian

teachers were less likely to fail the student with a perceived lack of ability. In accordance with

Weiner's Attribution Theory, anger was most strongly associated with perceived student

responsibility whereas sympathy was negatively related to perceived responsibility in both the

French and Italian teacher populations. These findings show that across cultures, a student is

more likely to be held responsible for a lack of effort, as compared to a lack of ability, and

further, that teachers are willing to take some of the blame, which is encouraging.

The Control-Value Theory of Emotions

Similar to the cognitive component in motivation research, the affective component has also been evaluated in both students and teachers. Emotions are seen as multi-component processes that include affective, cognitive, motivational, expressive, and physiological components (Pekrun, 2006; Sutton, 2007). Affective processes tend to be outlined in theoretical models of motivation (Control-Value Theory, Attribution Theory) as consequences of cognitive processes. The emotion process is therefore assumed to be predicted by appraisals that can be primary (congruent or incongruent with ones goals) or secondary in nature (judgments about blame, potential for coping and expectations; Sutton, 2007). Research on teachers following from Attribution Theory shows that causal attributions result in emotional experiences that, in turn, have implications for behavioral and psychological adjustment outcomes (Weiner, 1985). Similarly, Pekrun's (2000) Control-Value Theory of emotions postulates that one's appraisals of an event (that are not necessarily conscious in nature) concerning its value and perceived controllability lead to specific emotions and behaviors (Pekrun, 2000).

Achievement emotions are defined by Pekrun (2000, 2006) as emotions tied to achievement activities/outcomes. There are two types of achievement emotions: activity emotions (pertaining to ongoing achievement) and outcome emotions (pertaining to outcomes of achievement activities). Also, achievement emotions can be considered state (temporary) or trait in nature (persistent over time). Pekrun's theory also suggests two groups of appraisals that most prominently predict emotional experiences in achievement settings: subjective control (perceived causal influence over actions and outcomes - expectancies about what will happen and attributions about what has already happened; Skinner, 1996), and subjective value (the importance of success or value of the activity/outcome). In other words, Pekrun is referring to

the expectancy/competence appraisals as well as value appraisals that predict different positive

and negative emotions that are either activating or deactivating in nature (e.g., negative

deactivating emotion: boredom; positive activating emotion: enjoyment (Pekrun, 2000, 2006;

Pekrun, Frenzel, Goetz, & Perry, 2007).

According to Control-Value Theory, prospective outcome emotions, retrospective

outcome emotions, and activity-related emotions are determined by various appraisal

antecedents. Prospective outcome emotions refer to emotions that relate to future success or

failure, such as hope, anxiety, and hopelessness. Retrospective outcome emotions are emotions

regarding past successes or failures, such as anger and regret. Lastly, activity-related emotions

are emotions experienced during an activity, such as enjoyment and boredom. For example, high

success expectancies combined with high perceived control/competence should result in feelings

of anticipatory joy, whereas low perceived control should predict hopelessness. In Table 1

below, the Control-Value Theory is displayed to illustrate the theory. Various studies have

investigated emotions in students based on Pekrun's model, including work on the control-value

antecedents and boredom in students (Pekrun, Goetz, Daniels, Stupnisky, et al., 2010), and

mathematics interest (Frenzel, Goetz, Pekrun & Watt, 2010). Recently, the Control-Value

Theory has been extended to explore the emotions of teachers (Becker, Goetz, & Morger, 2014).

Teacher emotions. With respect to teachers, Frenzel and colleagues have identified three

main activating emotions experienced by teachers: anger, anxiety, and enjoyment. Frenzel,

Goetz, Stephens, and Jacob (2009) further state that cognitive appraisals concerning personal

accountability (judgments about who is responsible for the outcome) are an important antecedent

of specific emotional experiences in teachers (e.g., anger), and that emotions such as anger can

impact teachers' psychological well-being and instructional behaviors over time (Frenzel et al.,

Table 1

Pekrun's Control-Value Theory

Object focus	Appraisals		Emotion
	Value	Control	
Outcome/prospective	Positive (success)	High	Anticipatory joy
		Medium	Hope
		Low	Hopelessness
	Negative (failure)	High	Anticipatory relief
		Medium	Anxiety
		Low	Hopelessness
Outcome/retrospective	Positive (success)	Irrelevant	Joy
		Self	Pride
		Other	Gratitude
	Negative (failure)	Irrelevant	Sadness
		Self	Shame
		Other	Anger
Activity	Positive	High	Enjoyment
	Negative	High	Anger

| Positive/Negative | Low | Frustration |
| None | High/Low | Boredom |

Note. Adapted from "The Control-Value Theory of Achievement Emotions: Assumptions, Corollaries, and Implications for Educational Research and Practice," by R. Pekrun, 2006, *Educational Psychology Review, 18,* p. 320.

2009). Moreover, teacher emotions can impact the classroom - for example when a teacher is angry, they are likely to be less able to adequately focus on the instructional task at hand. Overall, the empirical evidence suggests that there are both cognitive and behavioral consequences of emotions, which teachers experience while teaching, that can impact both student and teacher outcomes. Empirical research by Frenzel et al. (2009) found that among the three types of most commonly used emotions, enjoyment was most frequently experienced in the classroom. In addition, the most important predictor of positive emotions in teachers was student motivation and academic performance. On the other hand, teachers' negative emotions were highly impacted by students misbehaving and demonstrating a lack of motivation, with teachers' enthusiasm found to be highly associated with positive emotions.

Frenzel, Goetz, Ludtke, Pekrun, et al. (2009) investigated the relationship between student enjoyment, teacher enjoyment, and teacher enthusiasm. The results of a longitudinal study showed that when controlling for students' baseline enjoyment levels, teachers' enjoyment was positively related to students' enjoyment. Also, teachers' reports of enjoyment were positively associated with students' perceptions of teacher enthusiasm that, in turn, positively predicted students' enjoyment levels. This mediation supports the assumption that student enjoyment can be influenced by enthusiastic teaching methods.

To further understand teacher enthusiasm as a motivational construct, Kunter, Frenzel, Nagy, Baumert, et al. (2011) conducted a confirmatory multi-group factor analysis and found two underlying dimensions of teacher enthusiasm: teaching enthusiasm and subject enthusiasm. Both forms of enthusiasm were negatively related to burnout and neuroticism, and positively related to self-efficacy, job satisfaction, and life satisfaction. Moreover, teachers reported higher levels of teaching enthusiasm in classes with higher achievement, higher enjoyment, and less disruption by the students, with teachers also reporting higher levels of subject enthusiasm when teaching larger classes, and in classes with higher achieving students. Finally, when students were asked if they believed their teacher was enthusiastic, results showed that students were more likely to detect teaching enthusiasm, as opposed to subject enthusiasm, which was not an observable behavior to the students.

Concerning the perceived causes of emotions, such as anger and frustration, teachers were more likely to attribute the source of anger and frustration to others (83%) than to classroom circumstances (19%) or themselves (6.5%). Anger and frustration were most frequently present when teachers felt that students were blocking their teaching goals and lacking in attention, or when students were exhibiting low levels of motivation. Studies have also found that anger is most commonly felt as a consequence of student misbehavior and poor academic work attributed to 'laziness' or lack of effort. Moreover, anger was found to predict teacher attrition and lower levels of job satisfaction (Frenzel, 2009), with other studies showing anger to be one of the most detrimental emotions for teachers and a contributor to an impaired ability to sufficiently cope with classroom challenges (i.e., self-regulation failure; Sutton, 2007).

Teacher Motivation Research: Summary

In sum, attrition is rising in new teachers due to occupational and classroom stress that may lead to burnout. Burnout, job satisfaction, and attrition are related constructs showing problematic rates in teachers warranting further study on psychological variables that predict motivation and persistence. The preceding sections highlight existing research on teachers' perceptions of competence (self-efficacy) and values (goals) as motivational variables, as well as their attributions towards students and emotions as psychological consequences of these variables (anxiety, anger, and enjoyment). The preceding review further suggests that teachers' beliefs with respect to motivational factors (e.g., competence, values) can impact their emotional states that, in turn, can predict their behavior with respect to instructional strategies and attrition (Frenzel et al., 2009; Pekrun, 2000; Weiner, 1985). Given the clear potential implications for the study of additional, higher-order motivational strategies that may also predict emotional well-being in teachers, the next section will discuss the importance of investigating social comparisons in teachers and outline specific hypotheses concerning as to how social comparisons may impact teachers' burnout, job satisfaction, intentions to quit, and emotions.

<center>**Social Comparisons**</center>

Relevant Psychological Theories

As a prominent theory of motivational self-regulation from the developmental psychological literature, Heckhausen, Wrosch, and Schulz's (2010) Motivational Theory of Life-Span Development attempts to explain how individuals regulate their motivation in response to situational opportunities and constraints in proposing three general classes of motivational strategies. The first class involves *goal engagement* and refers to attempts to achieve desired outcomes through effort, adaptive help-seeking, value enhancement, and minimizing

distractions. Generally speaking, engagement-oriented strategies overlap directly with constructs involving both expectancy and value that have been previously addressed in teacher motivation research. In contrast, the second class of strategies involves *goal disengagement* that instead involves downgrading the importance of a chosen goal. This strategy is predominantly maladaptive in achievement settings and has been evaluated as a consequence of demotivation in teachers (i.e., intentions to quit; Klassen & Chui, 2011).

Finally, the third class of *self-protective* motivational strategies involve compensating for the motivational impact of negative events. Whereas self-protective strategies have recently been found to predict better health (Hall, Chipperfield, Perry, & Ruthig, et al., 2006), motivation to succeed (Hall, 2008), and academic achievement in students (Hall, Perry, Ruthig, Hladkyj, et al., 2006), these strategies are generally underexplored in educational settings due to their explicit focus on well-being. One specific self-protective strategy previously explored in prior research are social comparisons that typically involve comparing oneself with worse-off others. Whereas the psychological benefits of this approach have been evaluated with older adults (e.g., Chipperfield & Perry 2006; Hall et al., 2010; Heckhausen, 1999), no research to date has explored the effects of this strategy among teachers. Moreover, there exists no published research with teachers exploring social comparisons of any type as a motivational strategy for dealing with classroom challenges, stress, and burnout. The present study therefore focuses on three types of social comparisons: downward social comparisons that involve comparing oneself with worse-off others, horizontal social comparisons in which comparisons are made with similar others, and upward social comparisons in which the target of comparison is a role model.

Social Psychological Research on Social Comparisons

Exploring comparisons through the theoretical lenses of social-psychological research on cognitions, emotions, and self-theories has shed insight into the reasons why individuals engage in social comparisons and the effects thereof (Suls & Wheeler, 2000). Social comparisons are essential for human social life because of the adaptive nature of comparing self with others (Buunk & Mussweiler, 2001). Social comparison typically involves actively searching for information about other people, as well as selective affiliations, and evaluating oneself against others (Taylor & Lobel, 1989). Individuals often compare themselves with others in order to answer the question "Am I as good as I ought to be?" In making this comparison, they are engaging in interpersonal judgments (similar to Attribution Theory) and comparing their own performance against that of others (Goethals & Darley, 1977). Individuals also tend to search for other individuals who are similar to themselves prior to making a judgment/comparison (Mussweiler & Strack, 2000). Festinger (1954) was the one of the first social psychologists to discuss social comparisons, stating that an individual will seek to attain information about others so as to engage in self-evaluation (Suls et al., 2002; Taylor & Lobel, 1989). Furthermore, he believed that it is human nature to evaluate one's opinions and abilities against the opinions and abilities of others, with such comparisons being required to ensure accurate self-evaluations.

Following the initial work of Festinger, Social Comparison Theory evolved and underwent several reformulations and expansions throughout the next few decades (Buunk & Messweiler, 2001). In 1966, Wheller introduced the rank paradigm and the existence of the drive upward (now referred to as upward social comparison), stating that individuals prefer to compare themselves against those who are better-off. Soon after, social cognition became the focus of Social Comparison Theory in its focus on the consequences of these comparisons with respect to

self-evaluations, self-perceptions, and self-knowledge. In addition, Social Comparison Theory

was explained through an evolutionary perspective in which it was hypothesized that individuals

sought to understand their roles in society to prevent competition and enhance unity among

groups of similar individuals (Beach & Tesser, 2000).

To understand the influence that social comparisons have, a more in-depth look at the

processes behind the comparisons is required. In accordance with The Expectancy-Value

framework, researchers developed The Proxy Model to look at the functional use of comparisons

as a predictor of the likelihood of success on a task (Suls et al., 2002). The Proxy Model suggests

that one can expect to perform at the level of another who is experienced, if there are similarities

between their past performances. In other words, if two people have similar past performance

outcomes, one can expect similar future performance outcomes. Furthermore, the authors

elaborated and proposed that current preferences, current beleifs, and future preferences should

be similar between the agent and the expert in order for predictions (expected performance

outcomes) to be accurate.If these criteria are met, then comparisons tend to be more accurate

with respect to predicting future behaviors. In contrast, expectancies cannot be effectively

generated when comparing with dissimilar others.

Research conducted on social comparisons has also found several individual differences

in the types of comparisons made and the outcomes associated with making a specific type of

comparison. For example, studies show children to prefer upward social comparisons in order to

improve (Blanton, Buunk, Gibbons, & Kuyper, 1999), and that individuals high in self-esteem or

exhibiting a social comparison orientation (an individual prone to making comparisons; Gibbons

& Buunk, 1999) are more likely to engage in upward comparisons. Social comparisons have also

been found to interact with motivation-related beliefs such as perceived control in predicting

adjustment outcomes. For example, Bailis, Chipperfield, and Perry (2005) found that among

older adults who reported low levels of perceived control over their health, those who made more

upward social comparisons (indicating that they were better-off health-wise as compared to

others their own age) had a lower risk of hospitalization and death up to six years later, as well as

shorter hospital stays.

More recently, individual differences in goal orientations have been found to predict

social comparison strategies. In a study with sixth-grade students, Butler (1992) investigated the

different uses of social comparisons for ability-oriented and mastery-oriented students.

Participants were assigned to either an ability condition in which they were asked to draw circles

to be evaluated, or to a mastery condition in which they were asked to draw circles with no

assessment. The results showed that students in the ability-oriented condition were more likely to

compare their task performance with those of others (looking for normative feedback/social

comparison information), whereas students in the mastery-orientated condition wanted to

understand the information regarding the task. Also, those who were in the mastery-orientated

condition were more likely to divide their time between obtaining normative feedback and task

information, as compared to the students who were in the ability-oriented condition. Taken

together, these results suggest that social comparisons may be used as a compensatory

motivational strategy for individuals with compromised levels of perceived control or mastery to

bolster adjustment outcomes.

Jagacinski and Nicholls (1987) looked at the impact that social comparison information

had on competence and affect as moderated by task involvement (a focus on the task) or ego

involvement (a conscious concern over demonstrating competence). When students were told

that other students had performed a task as well as they had but with less effort, the individuals

in the ego-involving context who had invested high effort reported lower feelings of

competence, as well as more negative affect (e.g., guilt, embarrassment). In the task-involved

context, no significant differences were found when making social comparisons. These results

indicate that comparisons with better-off others may also have detrimental effects on perceived

competence and affect for students already investing considerable effort in their studies.

To summarize, the above research indicates that although social comparisons may have

significant benefits for struggling individuals (e.g., Bailis et al., 2005), there may also be risks

for psychological, physiological, and cognitive well-being (Jagacinski & Nicholls, 1987). Thus,

to further elaborate on the importance of examining social comparisons among teachers to

predict adjustment and retention, an in-depth outline of each type of social comparison will now

be presented in the following sections. First, both the benefits and downfalls of comparing to

worse-off others (downward social comparisons) will be discussed as per empirical work with

students and The-Big-Fish-Little-Pond-Effect. Second, comparisons to better-off others (upward

social comparisons) will be discussed as a potential coping strategy in the face of challenges,

specifically with respect to a focus on role models. Finally, related work exploring comparisons

with other individuals in the same situation (horizontal comparisons) will be presented with a

focus on the need for affiliation (Ryan & Deci, 2000).

Downward Social Comparisons

When individuals compare themselves to worse-off others, they are engaging in

downward social comparisons. According to Wills (1981), individuals who feel threatened by

their failures are more likely to engage in downward social comparisons than upward social

comparisons. The impulse to make a downward social comparison comes from an aspiration to

self-enhance, and comparing with those that are worse off is assumed to enhance subjective well-

being and ameliorate self-esteem (Hakmiller, 1966; Taylor & Lobel, 1989; Wills, 1981). In accordance with this view, Locke (2003) also found downward comparisons to be more beneficial for overall well-being, and mood, as compared to upward or horizontal comparisons.

Various studies have explored the effects of social comparisons on emotions and adjustment, particularly downward social comparisons. Wheeler and Miyake (1992) found that people more often make downward comparisons when they are happy, and/or have high self-esteem, as opposed to when they are unhappy and/or have low self-esteem. Stewart et al. (2013) also found that downward social comparisons were most often used among older adults when levels of perceived control were low (cf., upward comparisons in Bailis et al., 2005). Although downward social comparisons are further hypothesized to protect psychological resources when the likelihood of accomplishing one's goal is low (Heckhausen & Schulz, 1995; Stewart, Chipperfield, Perry, & Weiner, 2012), findings suggest they do not significantly impact adjustment when tasks are attainable (e.g., no effects on depression, life satisfaction, and stress in older adults; Stewart et al., 2013).

Bailis and Chipperfield (2006) further investigated how levels of collective self-esteem moderate the effects of social comparisons in older adults. Collective self-esteem refers to an individual's self-evaluation in the context of the group to which he or she belongs. The *heightened identification hypothesis* states that higher collective self-esteem supports deliberate identification of others for comparison and is assumed to have beneficial effects, whereas the *heightened contrast hypothesis* states that individuals with higher collective self-esteem may benefit emotionally from downward or upward social comparisons by simply identifying differences between themselves and others. Results showed individuals who made downward comparisons and had higher levels of collective self-esteem to report significantly more positive

self-evaluations and positive emotions six years later (Bailis & Chipperfield, 2006).

Additionally, individuals with high levels of collective self-esteem who made upward

comparisons were found to report significantly more negative emotions, suggesting once again

that individuals in less motivationally adaptive conditions (i.e., more isolated) may benefit from

upward social comparisons as a motivational strategy.

Social comparisons have also been found to predict adjustment in romantic relationships.

For example, Lockwood, Dolderman, Sadler, and Gerchak (2004) investigated the role of

closeness in romantic relationships to evaluate its effects on social comparisons as self-regulation

strategies by asking participants to imagine making upward or downward comparisons in

different contexts. Upon being asked to anticipate making an upward or downward comparison

with their partner were their partner to score a higher than themself on an exam, participants

reported feeling more competent, and believed they would have higher self-esteem, after making

a downward comparison, as compared to an upward comparison, in relation to their partner. In a

second study, the partners were asked to unscramble 20 sentences (containing words intended to

prime a feeling of closeness), and were asked to either imagine that their partner scored higher or

lower than themself. Results once again showed that participants believed that they would rate

their abilities more positively after downward comparisons, and feel less competent after upward

comparisons. There were also interactions observed between closeness and comparison type,

showing participants who displayed high levels of closeness to expect fewer negative reactions

to upward comparisons, and rate themselves more positively when making downward

comparisons, than those low in closeness. Taken together, these results underscore the potential

benefits of downward comparisons concerning performance outcomes, as well as the potential

moderated benefits of upward comparisons with respect to academic achievement.

However, other research has found downward comparisons to produce negative self-evaluations and have negative effects on psychological adjustment for individuals faced with health challenges. For instance, Buunk et al. (1990) investigated the affective consequences of social comparison in cancer patients (Study 1) and married individuals (Study 2), with both studies showing the potential benefits and risks of both upward and downward comparisons. In Study 1, the authors found self-esteem and perceived control to moderate the tendency to develop positive or negative feelings, with cancer patients low in self-esteem and perceived control over their illness being more likely associate downward comparisons with negative personal consequences. Additionally, although cancer patients reported more frequently engaging in upward comparisons as a coping strategy, upward comparisons were also seen as maladaptive coping strategies for those with low self-esteem. Finally, cancer patients with high perceived control over their illness and symptoms felt less threatened by exposure to very sick patients (downward comparisons), whereas patients with low perceived control made more upward comparisons, focusing on the positive outcomes others have experienced.

In their second study, Buunk et al. (1990) investigated the affective consequences of social comparisons in couples experiencing marital dissatisfaction and uncertainty. Results showed that the higher the level of marital dissatisfaction, the more likely individuals felt unhappy when making upward comparisons to couples that had better relationships, and when comparing downwards to marriages that were worse off than their own. Also, the more uncertain individuals felt about their relationships, the more negative they felt when comparing to others having either worse-off or better-off marriages. The results of these two studies again underscore the importance of moderating variables such as self-esteem, dissatisfaction, and uncertainty that

can lead to mixed results when evaluating the effects of both upward and downward social comparisons in relationship contexts.

According to Marsh and Parker (1984), self-perceptions in educational situations are formed by social comparisons. The act of comparing oneself with others is very similar to the Big-Fish-Little-Pond Effect (Marsh, 1987), which states that individual experiences of self-concept depend on the peer reference group, with it being better for one's self-concept to be a good student comparing against average students, than to be a good student comparing against students with high ability. For example, research by Zeidner and Schleyer (1998) exploring the Big-Fish-Little-Pond-Effect in Israeli elementary school children found it to affect academic self-concept, test anxiety, and school grades. More specifically, gifted students placed in regular ability classes had higher self-concepts, lower test anxiety, and higher school grades, as compared to non-gifted students in their classes. Conversely, research has also found higher average achievement to predict greater test anxiety, implying that comparisons to higher-achieving classmates had a negative impact on student emotions in achievement settings (Goetz, Preckel, Zeidner, & Schleyer, 2008).

Overall, empirical studies to date in the health, relationship, and achievement domains show mixed results when contrasting downward social comparisons with other comparison strategies (i.e., upward comparisons) with respect to its benefits and risks as a motivational strategy in the face of challenges. Whereas for some it protects them from perceived threats, it can for others lead to negative emotions, with these effects moderated by psychological and cognitive factors such as self-esteem and perceived control. Given that the effects of downward social comparison on emotions and adjustment outcomes have not to date been empirically investigated in teachers, the present study explored the effects of downward social comparisons

in teachers, in contrast to both upward and horizontal comparisons, in an effort to more clearly

evaluate the effects of this strategy on adjustment, emotions, and quitting intentions.

Upward Social Comparisons

With respect to research focusing more explicitly on comparisons with better-off others,

this work is based on the assumption that individuals want to believe that they have positive

characteristics similar to those of upward targets, as positive role models tend to inspire

individuals to accomplish similar levels of excellence (Lockwood, Jordan, & Kunda, 2002).

More specifically, the term "role model" is defined by Robert K. Merton, an American

sociologist who coined the term, as an individual to whom others compare themselves who

occupies a social role that they desire (Holten, 2004). For example, award-winning scientists are

often highlighted in the media in an attempt to enhance motivation to pursue scientific study

among younger individuals who look up to the model (e.g., Stephen Hawking). Thus, in contrast

to negative role models motivating individuals to avoid undesirable outcomes, positive role

models inspire others to pursue a given goal (Lockwood et al., 2002). Consequently, whereas

negative role models promote strategies to prevent negative outcomes (i.e. making downward

social comparisons to worse-off others that elicit stress), positive role models tend to encourage

adaptive behavior required to achieve one's goals (Buunk et al., 1990). Overall, studies have

found that positive role models are most beneficial when they encourage strategies that are

similar to an individual's current regulatory interests (Lockwood et al., 2002). To elaborate,

individuals who are interested in pursuing a given outcome are most inspired by positive role

models who are also actively working towards that goal, whereas individuals who are interested

in avoiding undesirable outcomes are more inspired by negative role models that foster

avoidance strategies.

According to Social Learning Theory, most behaviors are learned by observing others (Bandura, 1969, 1971) with four interrelated subprocesses being required for successful modeling to occur: attention (a stimulus, or actor, holds the attention of the learner), retention (long-term retention of behaviors learned), reproduction (a learner is required to put together a set of responses in order to achieve behavioural reproduction), as well as reinforcement and motivation. It is proposed that the combination of these processes can allow individuals to benefit from observations and comparisons with positive role models demonstrating ideal behaviours in educational settings, thereby providing a useful theoretical framework to account for the observed benefits of upward social comparisons in previous research.

Upward social comparisons have been found to initiate motivation, improve mood, and induce reflection (Tesser, 1988). In contrast to the *self-enhancing motive* (making downward comparisons), Wood (1989) proposed the *self-improving motive* prompting individuals to direct their comparisons at those they feel will aid them in improving themselves, and provide inspiration. In other words, individuals tend to compare upwards with positive role models in order to become more capable versions of themselves (Festinger, 1954), with individuals who believe desired status to be achievable demonstrate an increase in goal-related competence and motivation. For example, despite the positive feelings associated with downward comparisons, cancer patients were shown to seek exposure to those who had overcome the illness (i.e., upward social comparisons) in order to sustain their health-related motivation (Bailis & Chipperfield, 2006; Lockwood & Kunda, 1997). Overall, upward comparisons have been associated with higher levels of motivation and hope, primarily when the objective is self-improvement (Corcoran et al., 2011; Festinger, 1954; Taylow & Nobel, 1989).

In related research with students, Lockwood and Kunda (1997) investigated the impact of "superstars" on undergraduates' self-perceptions, particularly when the superstar was considered relevant or their status was perceived as attainable. Participants were asked to read an article about a teacher or accountant winning an award for achievements in their field and then rate themselves on 40 adjectives (i.e., bright, skillful) and rate the relevance of the target to their future profession. Findings showed that when a student was exposed to a relevant superstar (i.e., a student wanted to become a teacher and read about the award-winning teacher), they rated themselves more positively than when the target was dissimilar. In a second study, first- and fourth-year undergraduates were asked to read a newspaper article about a fourth-year student who had recently won an award for academic achievements. Results showed that first-year students focused on their similarities to the relevant target, which evoked self-enhancement and inspiration as the goal was considered attainable over the coming years, whereas fourth-year students did not benefit presumably as a consequence of the goal not being attainable. These studies highlight the benefits of comparing to a role model, when the model is seen as relevant and the desired status is perceived as attainable.

Huguet, Dumas, Monteil, and Genestoux (2001) investigated the impact of upward social comparisons on performance outcomes. In a longitudinal study with 12-14 year-old students, children were found to make same-sex comparisons to students who were slightly outperforming them, suggesting that students prefer to look to better-off others in order to sustain their motivation and self-improve. Finally, individuals tended to select better-off individuals to compare themselves to if they perceived the topic of comparison as ego-threatening (e.g., used as a coping strategy). Overall, these results show that comparing with better-off others, namely those perceived as close or relevant, can be used as a coping strategy to promote motivation.

As evidenced here, although there is little research on the effectiveness of upward comparisons or related constructs (e.g., role models, better-off others) as motivational strategies in academic achievement settings, extant research suggests several advantages to making upward comparisons for psychological adjustment and persistence. However, despite this evidence concerning the benefits of upward social comparisons, researchers have also found self-evaluations and self-esteem to be lower among individuals making upward comparisons depending on the circumstances (for a review, see Collins, 1996). Nevertheless, the evidence suggests overall that upward comparisons may help individuals achieve their goals through efforts to improve oneself through comparisons with positive and relevant role models, and that this motivational strategy may prove beneficial for facilitating adjustment in teachers.

Horizontal Social Comparisons

As early as 1938, researchers identified the need for affiliation, defined as a person's need to belong to a social group, as a basic human need (Murray, 1938). According to Hicks (1996), students have the basic desire to form relationships with their peers in academic settings. Moreover, Ford (1992) stated that two specific types of social goals were based on social comparisons that students made: Superiority goals involve a student evaluating his or her outcome against that of others, whereas equity goals involve a student striving to be more similar to others. In both cases, a horizontal social comparison is made towards fellow classmates.

Additional theoretical assertions relevant to horizontal comparisons are found in the literature on Self-Determination Theory and Attachment Theory. According to Ryan and Deci (2000), self-actualized individuals have a sense of autonomy (making decisions for themselves), competence (feeling efficacious), and most importantly for this study, relatedness (a sense of belonging to a group). In addition, research on Attachment Theory has stated that the need for

relatedness begins at childhood, with work by Bowlby (1951, 2008) showing individuals to develop a close attachment with a primary caregiver at birth and throughout the lifespan seek to maintain a sense of belongingness with one's peers. Relatedness is centrally important for internalization of norms in academic settings, with studies showing students with closer bonds to their teachers and peers to have more positive emotions (Furrer & Skinner, 2003).

To further examine Self-Determination Theory and belongingness, VanRyzin, Gravely, and Roseth (2009), explored the effects of autonomy and belongingness on psychological adjustment. Their results indicated that students' self-reported belongingness (support from other students) positively influenced engagement in learning that, in turn, led to better psychological adjustment (hope). Moreover, this relationship was also observed in a longitudinal study by the authors showing Time 1 levels of belongingness positively predicted Time 2 levels of belongingness 5 months later that, in turn, corresponded with increased Time 2 engagement and hope. Belongingness has been found to predict academic achievement, value, and psychological variables such as depression. For example, Goodenow (1993) found that self-reported levels of belongingness/support in students from Grades 6-8 to positively predict English grades, with work by Freeman, Anderman, and Jensen (2007) showing perceived classroom belonging to positively predict academic self-efficacy, intrinsic motivation, and perceptions of value. These findings suggest that when students feel a sense of belongingness to a class, they tend to feel more confident in accomplishing their goals, and find the material more important and relevant to them. Similarly, efforts to reduce adolescent problem behaviors have found Teen Outreach programs that promote autonomy as well as relatedness with peers and facilitators to significantly reduce problem behaviors such as poor performance and teen pregnancy (Allen, Kupermunc, Philliber, & Herre, 1994). These results illustrate that if students perceive a sense of

belonging with their peers and teachers they are less likely to engage in problematic behaviors and better-off academically.

Additionally, a related construct referred to as collective self-esteem, an individuals' self-evaluation as a member of a group, has been found to have beneficial outcomes in adult populations. More specifically, among older adults with low health-related perceived control, high levels of collective self-esteem was found to predict fewer chronic illness conditions over a six-year span (Bailis et al., 2008). High levels of collective self-esteem were also found to delay a decline in activity levels, which would normally decline more rapidly as a consequence of growing older, underscoring the importance of this motivational strategy for physical as well as psychological health outcomes. Overall, motivation-related variables similar to horizontal social comparisons have been found to be both common and beneficial with respect to adjustment in health and achievement settings, thus suggesting that horizontal comparisons may have similar benefits for facilitating adjustment in teachers.

Social Comparisons in Teachers

When teachers are dealing with a challenging outcome (i.e., student misbehaviour, poor performance), looking to others for social support can be a useful tool in regulating their emotions. However, although research concerning variables related to horizontal social comparisons (e.g., belongingness, relatedness) has been conducted with children, older adults, and in romantic contexts, the utility of this motivational strategy for teachers remains underexplored. Nevertheless, research related to social comparisons in teachers has been conducted with respect to three overlapping constructs, namely collective self-efficacy, social goals, and perceived relatedness.

With respect to the link with self-efficacy, Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) have emphasized the need to distinguish between two types of teacher self-efficacy: individual and collective. *Individual* self-efficacy refers to the competence an individual believes he or she has to successfully complete a given task, whereas *collective* self-efficacy refers to efficacy individuals feel regarding their collective performance of their group as teachers (Parker, Hannah, & Topping, 2006). Investigating the relationship between teacher self-efficacy, collective self-efficacy, and control beliefs, Skaalvik and Skaalvik (2007) found teachers' individual self-efficacy to be strongly associated with their collective self-efficacy, with collective self-efficacy corresponding to lower burnout via lower levels of individual self-efficacy.

Given teachers' demonstrated need to connect with others, especially their students, recent research in educational psychology has also explored the effects of social goals on instruction and adjustment in teachers. For example, a study by Butler (2012) investigated relational goals in Israeli teachers, the results showed teachers' relational goals to predict teacher social support with their students, as well as higher levels of mastery-oriented instruction. In a follow-up study, the authors found relational goals to additionally predict student reports of teacher social support, with teachers who aimed at connecting with students being perceived as more emotionally supportive instructors. Similarly, Butler and Shibaz (2014) found that teachers' relational goals also predicted teachers' reports of stimulating instruction (enjoyment of teaching). Taken together, findings concerning teachers' social goals demonstrate the complexity of teachers' motivational beliefs beyond instructional concerns (e.g., mastery) as well as the implications of socially-oriented motivational variables teachers for student perceptions (e.g., support) and development (e.g., help-seeking).

Finally, Klassen et al. (2012) conducted two studies exploring the relationship between teacher satisfaction and psychological need satisfaction (relatedness, autonomy, competence), and teaching-related engagement, emotions, and exhaustion. The results from Study 1 showed that autonomy support from principals was positively associated with teachers' perceived relatedness with colleagues and students, with elementary school teachers reporting higher levels of relatedness as compared to secondary school teachers. Moreover, they found perceived relatedness with colleagues and students to positively predict engagement and negatively predict emotional exhaustion. Results from Study 2 further showed perceived autonomy to positively predict relatedness with students that, in turn, lead to better engagement and emotions (anxiety, anger, and enjoyment). However, findings also showed relatedness with colleagues to negatively predict work engagement and enjoyment, raising concerns as potential negative effects of teachers making horizontal social comparisons with their colleagues.

Taken together, these studies suggest that although some research on motivation in teachers has looked at individually-oriented constructs (e.g., self-efficacy, goals, attributions) and socially-oriented constructs (e.g., collective self-efficacy, social goals, relatedness), no research to date has investigated the impact of social comparisons as motivational self-regulation strategies burnout, job satisfaction, intentions to quit, and emotions in teachers. Nonetheless, findings from relevant research with teachers suggest that socially-oriented constructs may have benefits for teachers (e.g., collective self-efficacy, Skaalvik & Skaalvik; 2007), as well as risks (e.g., relatedness, Klassen et al., 2012), underscoring the need to more closely evaluate the effectiveness of social comparisons on psychological adjustment, emotional well-being, and quitting intentions in teachers for whom these strategies may help cope with occupational stress.

The Present Study

Whereas research efforts exploring teacher motivation and emotions to date are consistent with a traditional expectancy-value perspective on achievement motivation (see Wigfield, Tonks, & Klouda, 2009), research exploring the role of higher-order motivational constructs in predicting burnout, such as motivational self-regulation strategies, is presently lacking, particularly with respect to the effects of social comparisons in teachers. Given prior research with students underscoring the importance of motivational strategy use (Pintrich, 1999; Wolters, 2003) as well as volition in educational settings (e.g., Kuhl, 1996; Ottingen & Gollwitzer, 2009), it stands to reason that higher order, self-regulatory strategies should also predict critical outcomes in teachers as do more fundamental, individually-oriented motivational constructs outlined above. Thus, following from research showing the importance of social comparisons as self-protective motivational strategies in predicting both adjustment and behavior (Suls et al., 2002), the present study aimed to investigate the effects of three forms of social comparisons specifically in teachers (downward, horizontal, upward) on measures of burnout, job satisfaction, intentions to quit, and emotions. Based on the literature review presented thus far, the following three hypotheses were evaluated in this study:

Hypothesis 1. Although there is mixed evidence as to whether or not downward social comparisons are beneficial, it was proposed that downward social comparisons will be valuable for teachers in predicting better adjustment and emotional outcomes (e.g., well-being, Locke, 2003, Lockwood & Kunda, 1997) consistent with research showing that comparing with worse-off others are beneficial for individuals who cannot change their circumstances (e.g., Heckhausen & Schultz, 1995).

Hypothesis 2. Although Klassen et al. (2012) showed the potential negative implications of perceived relatedness for teachers, it was predicted that horizontal social comparisons would nonetheless prove to be beneficial for teachers consistent with multiple previous studies showing collective self-efficacy to be negatively associated with burnout (Skaalvik & Skaalvik, 2007), and a sense of belongingness in students to positively predict psychological adjustment (e.g., Ryzin et al., 2009).

Hypothesis 3. Finally, we predicted that upward social comparisons would promote better adjustment outcomes and emotions based on findings from Corcoran et al. (2011), Taylor and Nobel (1989), and Tesser (1988) showing the motivational and emotional benefits (e.g., hope) of social comparisons with respect to positive role models due to the resulting striving for self-improvement.

Methodology

Participants and Procedure

Practicing teachers ($N = 526$) were recruited from Quebec and Ontario via mass emails from school principals and teaching union representatives informing them of a two-part, online study investigating various aspects of motivation and burnout in teachers. Teachers were entered into a cash prize draw in exchange for their participation. The mean age of the participants was 40.89 years ($SD = 10$), 85% were female, and the mean number of years employed in the teaching profession was 12.87 years ($SD = 8.64$). The sample consisted of primary ($n = 256$), secondary ($n = 213$), and CEGEP teachers (Quebec grades 12-13; $n = 29$). Most of the participants were Caucasian (90.5%), followed by Caribbean (2.2%), East Asian (2.0%) South Asian (1.6%), African (1.6%), West Asian (0.8%), Aboriginal (0.8%), and Southeast Asian (0.4%). In the web-based questionnaire, participants were first asked to complete demographic

items (e.g., age, gender) that were evaluated as covariates in the main analyses. Participants

were subsequently asked to complete questions regarding social comparisons (Haase,

Heckhausen, & Koeller 2008), as well as self-report measures of burnout (Maslach, Jackson, &

Leiter, 1986), job satisfaction (Moè, Pazzagli, & Ronconi., 2010), intentions to quit (Hackett,

Lapierre, & Hausdorf, 2001), and emotions (Frenzel et al., 2009).

Study Measures

The independent measures in this study were the three forms of social comparisons

(downward social comparisons, upward social comparisons, and horizontal social comparisons)

in addition to background variables as covariates. The dependent measures included three forms

of teacher burnout (emotional exhaustion, personal accomplishment, and depersonalization), job

satisfaction, intentions to quit, and teacher emotions. The items per scale, means, standard

deviations, actual ranges, and scale reliabilities for both the independent and dependent measures

can be found in Table 2 below.

Social comparisons. A six-item scale was used to evaluate social comparisons, adapted

from a self-regulation strategy questionnaire by Heckhausen and colleagues (Optimization of

Primary and Secondary Control, OPS; Haase et al., 2008). Participants responded on a scale of 1

= *strongly disagree* to 5 = *strongly agree*, with two items measuring intentional social

comparisons with respect to *downward comparisons* ($M = 3.0$, $SD = 1.0$, $r(458) = .51$, $p < .001$;

e.g., "When I experience teaching setbacks, I remind myself that I am better-off than other

teachers in many ways"), two items measuring *horizontal comparisons* ($M = 3.3$, $SD = .89$,

$r(465) = .38$, $p < .001$; e.g., "When I have difficulties with my students, I keep in mind that other

teachers are struggling too"), and two items measuring *upward comparisons* ($M = 3.7$, $SD = 9.2$,

$r(465) = .63$, $p < .001$; e.g., "When I experience teaching difficulties, I remind myself of successful teachers who overcame similar setbacks").

Burnout. A 22-item scale from the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1986) was used to assess three aspects of burnout. The measure was adapted from the original to refer more specifically to "students" as opposed to "recipients," and participants responded on a scale of 0 = *never* to 6 = *every day*. The three burnout subscales included nine items measuring *emotional exhaustion* ($M = 2.45$ $SD = 1.29$, $\alpha = .91$, e.g., "I feel emotionally drained from my work"), eight items measuring *personal accomplishment* ($M = 4.84$, $SD = .74$, $\alpha = .74$; e.g., "I can easily understand how my students feel about things"), and five items measuring *depersonalization* ($M = 1.7$, $SD = .97$, $\alpha = .93$; e.g., "I feel students blame me for some of their problems"). The reliabilities obtained are comparable to those found in published research with this measure (e.g., Beckstead, 2002; αs for emotional exhaustion, depersonalization, personal accomplishment:.90, .79,.71).

Job satisfaction. A five-item scale by Moe et al. (2010) was employed to assess job satisfaction ($M = 5.10$, $SD = 1.37$, $\alpha = .89$; cf. $\alpha = .84$ in Moe et al., 2010). Each item was rated on a Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*, with sample items including "In most ways my job is close to my ideal," and "If I could live my life over, I would not change the choices made in my job."

Intention to quit. A three-item scale by Hackett et al. (2001; Occupational Commitment Scale) was used to assess teachers' intentions to quit the teaching profession ($M = 1.76$, $SD = .98$, $\alpha = .86$; cf. $\alpha = .82$ in Hackett et al., 2001). Anchors for this measure ranged from 1 = *very unlikely* to 5 = *certain*, with sample items including "I intend to move into another profession/occupation," and "I think about quitting the teaching profession."

Table 2

Descriptive Statistics

Scale	α	M	SD	N	# Items	Actual Range
Upward social comparisons	.77	3.68	0.93	462	2	1-5
Horizontal social comparisons	.50	3.34	0.90	470	2	1-5
Downward social comparisons	.68	3.02	1.00	462	2	1-5
Enjoyment	.76	3.49	0.49	459	4	1-4
Anger	7	1.42	0.51	459	4	1-4
Anxiety	.76	1.71	0.66	459	4	1-4
Job satisfaction	.89	5.07	1.37	485	5	1-7
Intention to quit	.86	5.59	0.98	463	3	1-5
Emotional exhaustion	.91	2.59	1.28	475	9	0-6
Personal accomplishment	.74	4.84	0.74	475	8	0-6
Depersonalization	.68	0.97	0.94	475	5	0-6

Teacher emotions. A 12-item Teacher Emotions Scale (TES: Frenzel et al., 2009) was used to assess teachers' emotions concerning instructional activities, investigating both activity-related emotions (anxiety and enjoyment), and an outcome-related emotion (anger). Participants responded on a scale of 1 = *strongly disagree* to 5 = *strongly agree*. Subscales included four items measuring *anxiety* ($M = 1.71$, $SD = .65$, $\alpha = .76$; e.g., "I feel uneasy when I think about teaching"), four items measuring *enjoyment* ($M = 3.49$, $SD = .50$, $\alpha = .76$; e.g., "I generally enjoy teaching"), and four items measuring *anger* ($M = 1.43$, $SD = .51$, $\alpha = .77$; e.g., "I often feel

annoyed while teaching"). The reliability levels obtained are comparable to previous published

levels (e.g., Frenzel et al., 2009; α =.92 for enjoyment, .89 for anger, .86 for anxiety).

Analysis

Given the exploratory nature of the present study, the effects of social comparisons on

adjustment outcomes were investigated using two methodologies: a variable-centered and a

person-centered approach. Whereas a variable-centered approach focusing on relations between

measures is most typical, person-centered statistical approaches afford a complementary focus on

types of individuals with respect to clusters of related variables. Utilizing each approach, the

relationships between social comparisons and subsequent burnout, intentions to quit, and job

satisfaction were assessed. Moderating variables were not examined, but were controlled for to

have a more focused approach. The variable-centered approach consisted of regression analyses

evaluating the effects of social comparison strategies on psychological adjustment. To examine

the effects of these variables from person-centered approach, a two-step cluster analysis was

additionally conducted to determine the number of naturally occurring clusters of individuals in

our data with respect to social comparison strategy use. The effects of the resulting nominal

group classification variable were then evaluated on adjustment using analyses of covariance

(ANCOVAs).

Variable-Centered Analyses

In order to control for potential confounds with the motivational predictor variables as

well as outcomes assessed, demographic variables including teachers' age, gender, highest level

of education, grade level of instruction, and years of experience were evaluated as covariates.

The selection of covariates was informed by previous literature showing these indicators to

represent typically confounding variables (e.g., burnout; Kokkinos, 2007; Pas, Bradshoaw, &

Hershfledt, 2012; Vercambre, Brosselin, Gilbert, Nerrière, & Kovess-Masféty, 2009).

Regression analyses including these covariates were conducted to evaluate the benefits of social

comparisons as motivational strategies on psychological adjustment and behavioral intentions in

teachers. More specifically, eight linear regressions were conducted with the first step including

the five covariates (age, gender, highest level of education, years in practice, grade level of

instruction), and the second step including summed scores for each social comparison measure.

As presented in Table 3, the regression results showed that although downward social

comparisons were found to positively predict job satisfaction in teachers ($\beta = .14$, $p < .05$), they

were also found to predict higher levels of anger ($\beta = .15$, $p < .05$). In contrast, horizontal

comparisons were found to predict *lower* job satisfaction ($\beta = -.28$, $p < .001$), personal

accomplishment ($\beta = -.16$, $p < .05$), and enjoyment ($\beta = -.20$, $p < .001$), as well as *higher*

intentions to quit ($\beta = .13$, $p < .05$), emotional exhaustion ($\beta = .24$, $p < .001$), depersonalization

($\beta = .17$, $p < .05$), anger ($\beta = .18$, $p < .05$), and anxiety ($\beta = .17$, $p < .05$). Finally, upward social

comparisons were found to positively predict job satisfaction ($\beta = .24$, $p < .001$), personal

accomplishment ($\beta = .21$, $p < .001$), and enjoyment ($\beta = .24$, $p < .001$). Upward comparisons

were also found to negatively predict teachers' intentions to quit ($\beta = -.20$, $p < .001$), emotional

exhaustion ($\beta = -.20$, $p < .001$), depersonalization ($\beta = -.16$, $p < .05$), anger ($\beta = -.23$, $p < .001$),

and anxiety ($\beta = -.12$, $p < .05$). In sum, whereas upward social comparisons were found to be

beneficial for all dependent measures, horizontal comparisons were found to be a highly

maladaptive coping strategy for teachers.

Table 3.

Hierarchical Regression Results of Social Comparisons

Predictor	MBI: Emotional exhaustion	MBI: Personal accomplish-ment	MBI: Depersonali-zation	Job satisfaction	Intention to quit	Enjoyment	Anger	Anxiety
Step 1								
Age	.03	.04	-.10	-.10	.03	.09	-.10	.04
Gender	.03	-.00	-.11	.04	.03	.07	.00	-.02
Educational Level	-.07	.01	-.07	.02	-.04	-.05	-.01	.04
Years Teaching	-.07	.06	-.03	.17	-.07	.13	-.03	-.25
Grade Level	-.01	-.13	.10	.02	.03	-.01	.03	-.01
R^2	.01	.03	.05*	.02	.00	.05*	.02	.05*
Step 2								

Age	.05	.01	-.08	-.14	.05	.06	-.08	.06
Gender	.02	.01	-.12	.07	.02	.08	-.00	-.03
Education Level	-.06	-.00	-.06	.01	-.03	-.06	.01	.05
Years Teaching	-.03	.04	-.00	.13	-.05	.10	-.00	-.22
Grade Level	-.02	-.14	.09	.04	.01	.01	.02	-.02
Downward social comparisons (β)	.06	.04	.00	.14*	.00	.02	.12*	.04
Horizontal social comparisons (β)	.24**	-.16*	.17*	-.29**	.13*	-.20**	.18*	.17*
Upward social comparisons (β)	-.20**	.21**	-.16*	.24**	-.20**	.24**	-.23**	-.12*
R^2	.09**	.08**	.09**	.13**	.05*	.13**	.10*	.09**

Note. *p* < .05 **p* <.001. MBI = Maslach Burnout Inventory

Person-Centered Analyses

Overall, the results of the cluster analysis paralleled those of the variable-centered analyses in showing teachers who make more upward social comparisons to have better adjustment outcomes. Specifically, the results of the two-step cluster analysis yielded seven uniquely profiled groups, with percentage of individuals per cluster ranging from 9.2% to 18.9%. The specific clusters obtained were as follows: Cluster 1 (18.9%) – *average across comparisons*, Cluster 2 (18.9%) – *high upward/horizontal comparisons*, Cluster 3 (16.3%) – *average upward/downward, low horizontal comparisons*, Cluster 4 (14.6%) – *high upward comparisons*, Cluster 5 (12.4%) – *high across comparisons*, Cluster 6 (9.7%) – *low across comparisons*, and Cluster 7 (9.2%) – *high upward/downward comparisons*.

The most prevalent group clusters were teachers who reported average levels across each type of social comparison, or who reported high levels of both upward social comparisons and horizontal social comparisons. It is interesting to note that the only group in which one social comparison type was more strongly endorsed relative to the other types of comparisons was the cluster in which upward comparisons were more strongly endorsed relative to horizontal or downward comparisons. This finding suggests that it is relatively uncommon for teachers to primarily engage in horizontal comparisons or downward comparisons, and is consistent with variable-centered results in highlighting the importance of upward comparison strategies.

ANCOVAs were conducted to determine the differences between the different clusters on job satisfaction, intentions to quit, personal accomplishment, emotional exhaustion, enjoyment, anxiety, and anger (controlling for teachers' age, gender, highest level of education, grade level of instruction, and years of experience). ANCOVA results first showed significant differences between clusters on job satisfaction, $F(6,375)= 4.13$, $p < .001$. As seen in Figure 3, Clusters 4 (*M*
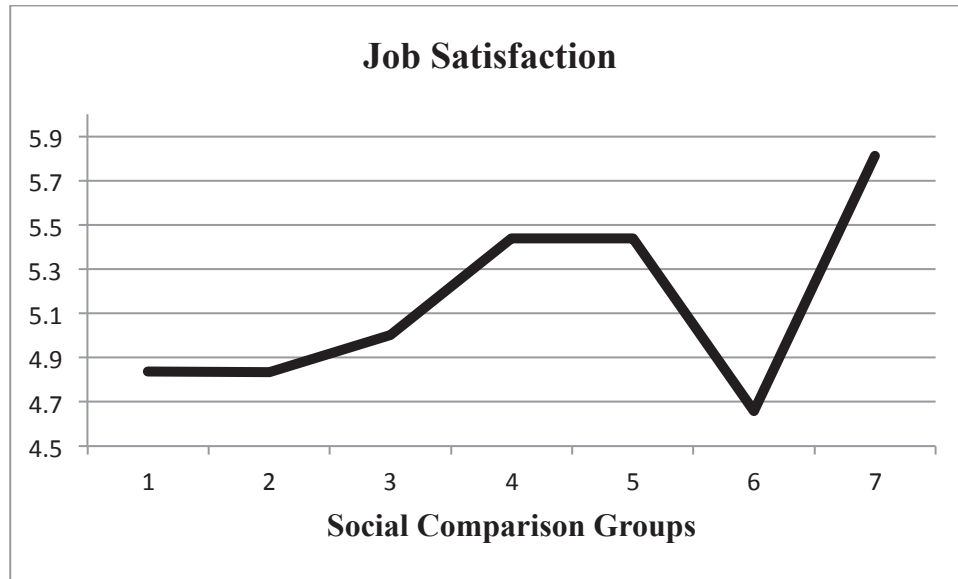
Figure 3. ANCOVA of comparison types and job satisfaction.

= 5.44, *SD* = 1.12), 5 (*M* = 5.44, *SD* = 1.28), and 7 (*M* = 5.81, *SD* = 0.88) reported the highest

job satisfaction. Overall, these findings indicated that teachers who engaged in upward social

comparisons were generally more satisfied with their jobs. Interestingly, when upward

comparisons were combined with horizontal comparisons, the benefits of upward social

comparisons were not as noticeable (cancelled out by horizontal comparisons). In contrast,

teachers who made average levels of comparisons (Cluster 1, *M* = 4.84, *SD* = 1.47), individuals

who endorsed high levels of both upward and horizontal comparisons, (Cluster 2, *M* = 4.84, *SD*

= 1.49) or those who engaged in few comparisons (Cluster 6, *M* = 4.66, *SD* = 1.54) were

significantly less satisfied with their jobs.

The results of the second ANCOVA revealed significant differences between clusters on

intentions to quit, *F*(6,375)= 3.33, *p* = .003. Clusters 4 (*M* = 1.50, *SD* = 0.86), 5 (*M* = 1.50, *SD* =

0.77), and 7 (*M* = 1.62, *SD* = 1.03) reported the lowest scores on intentions to quit, as seen in

Figure 4. These findings show that teachers who engaged in upward social comparisons were

less likely to quit their jobs, whereas teachers who engaged in few comparisons (Cluster 6, *M* =
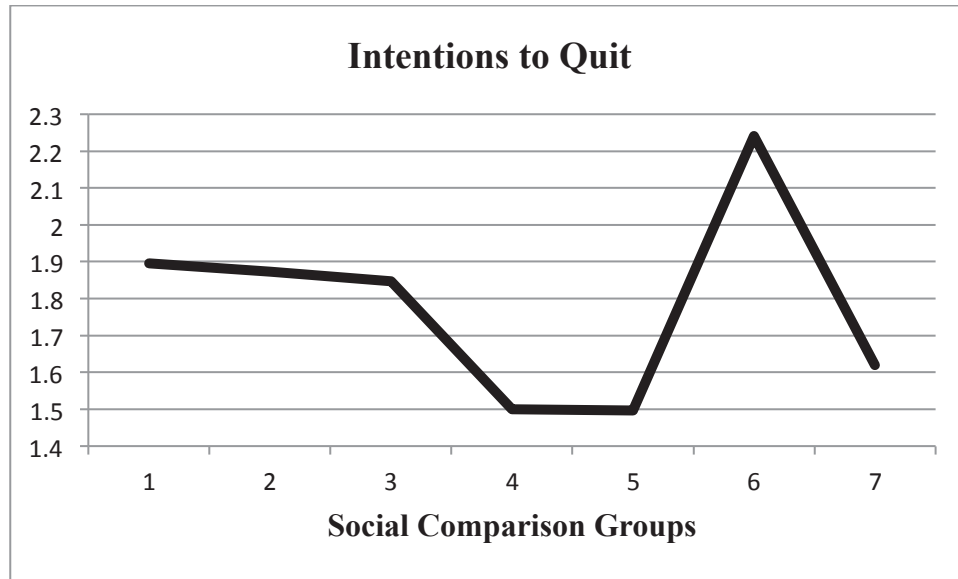
Figure 4. ANCOVA of comparison types and quitting intentions.

2.24, *SD* = 1.06) had the highest scores on intentions to quit. Finally, teachers who made average

levels of comparisons (Cluster 1, *M* = 1.90, *SD* = 0.98), who endorsed high levels of both

upward and horizontal comparisons, (Cluster 2, *M* = 1.88, *SD* = 0.99), or teachers who made

average upward and downward, and low horizontal (Cluster 3, *M* = 1.84, *SD* = 1.07) had mid-

range scores.

With regard to the burnout measures, ANCOVA findings revealed significant differences

between the clusters on personal accomplishment, $F(6,375)$= 3.16 p = .01. Figure 5 shows that

teachers who made more comparisons in general (Cluster 5, *M* = 4.99, *SD* = 0.57), and especially

those who made both upward and downward comparisons (Cluster 7, *M* = 5.28, *SD* = 0.57)

reported higher accomplishment levels, with teachers who reported more upward comparisons

(Cluster 4, *M* = 4.83, *SD* = 0.82), or both upward and horizontal comparisons (Cluster 2, *M* =

4.87, *SD* = 0.67), reporting mid-range accomplishment levels relative to other clusters. The

lowest levels of personal accomplishment were reported by teachers with average levels of

comparisons (Cluster 1, *M* = 4.70, *SD* = .0.66), low levels of horizontal comparisons (Cluster 3,
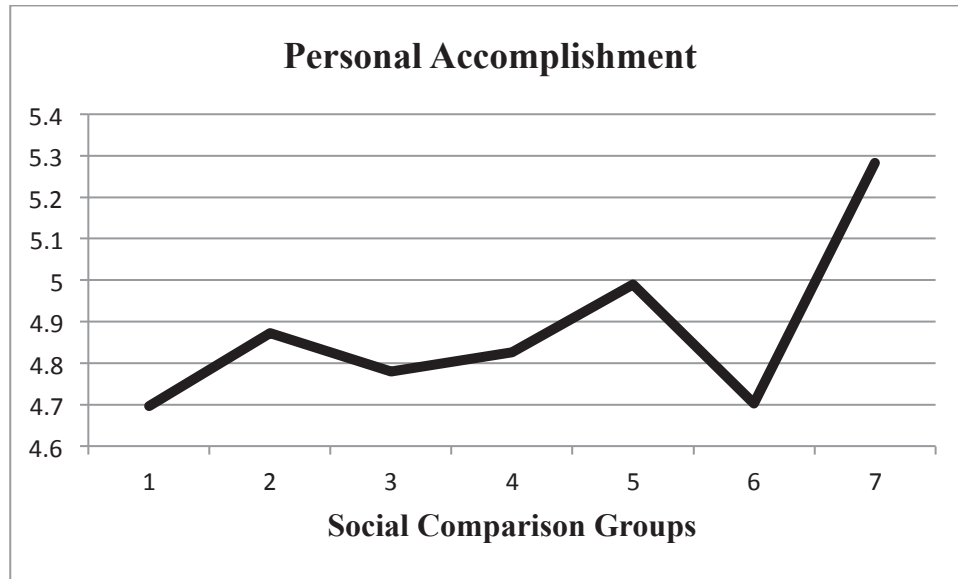
Figure 5. ANCOVA of comparison types and personal accomplishment.

$M = 4.78$, $SD = 0.80$), and teachers who were making few comparisons in general (Cluster 6, $M = 4.70$, $SD = 0.80$).

In addition, ANCOVA findings also showed significant differences between clusters on emotional exhaustion, $F(6,375) = 2.91$ $p = .01$, as indicated in Figure 6. The results showed that teachers who made more upward comparisons (Cluster 4, $M = 2.15$, $SD = 1.32$), and teachers who made both upward and downward comparisons (Cluster 7, $M = 2.22$, $SD = 1.19$) reported lower levels of emotional exhaustion. On the other hand, teachers who made both upward and horizontal comparisons (Cluster 2, $M = 2.62$, $SD = 1.29$), had low levels of horizontal comparisons (Cluster 3, $M = 2.59$, $SD = 1.27$), or made more comparisons in general (Cluster 5, $M = 2.70$, $SD = 1.20$), reported mid-range levels of emotional exhaustion. Finally, teachers with average levels of social comparisons (Cluster 1, $M = 2.97$, $SD = 1.19$), and teachers who made few comparisons in general (Cluster 6, $M = 2.88$, $SD = 1.44$) reported having the highest levels of emotional exhaustion.
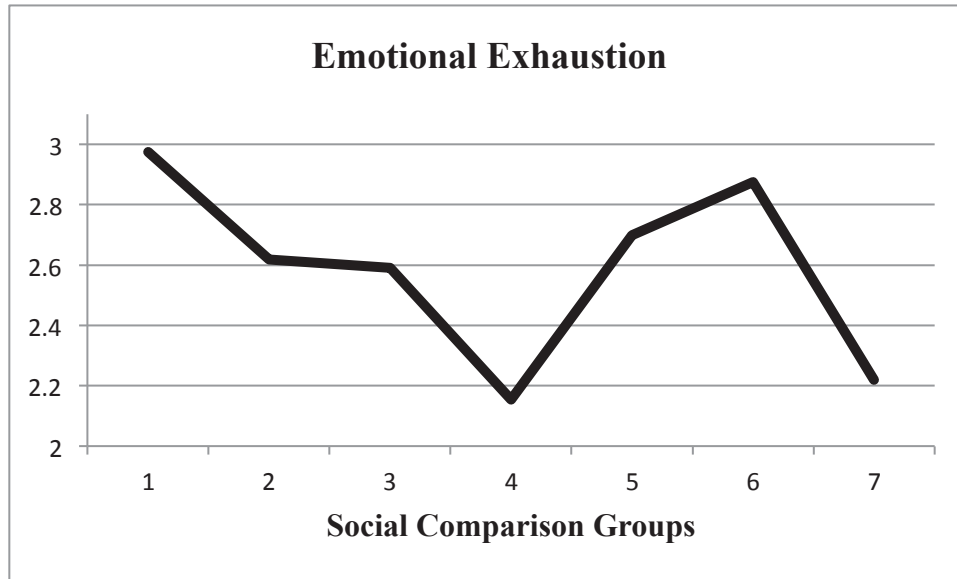
Figure 6. ANCOVA of comparison types and emotional exhaustion.

Finally, additional ANCOVAs were conducted to investigate the differences between the

clusters and teacher emotions. The first ANCOVA showed differences between clusters on

enjoyment, $F(6,373)= 3.17$ $p = .01$. Similar to the ANCOVA findings on job satisfaction,

teachers who made more upward comparisons (Cluster 4, $M = 3.60$, $SD = 0.45$), teachers who

made more comparisons in general (Cluster 5, $M = 3.63$, $SD = 0.47$), and teachers who made

both upward and downward comparisons (Cluster 7, $M = 3.70$, $SD = 0.42$) reported high

enjoyment, as visually represented in Figure 7. In contrast, teachers with average levels of social

comparisons (Cluster 1, $M = 3.33$, $SD = .0.56$), teachers who made both upward and horizontal

comparisons (Cluster 2, $M = 3.45$, $SD = 0.47$), teachers who had low levels of horizontal

comparisons (Cluster 3, $M = 3.42$, $SD = 0.53$), and teachers who made few comparisons in

general (Cluster 6, $M = 3.39$, $SD = 0.50$) reported low levels of enjoyment.

Second, significant results for anxiety, $F(6,373)= 3.73$ $p = .04$, showed that teachers who

had average levels of social comparisons (Cluster 1, $M = 1.81$, $SD = 0.64$), teachers who made

both upward and horizontal comparisons (Cluster 2, $M = 1.88$, $SD = 0.70$), teachers who

endorsed more comparisons in general (Cluster 5, $M = 1.83$, $SD = 0.63$), and those making few

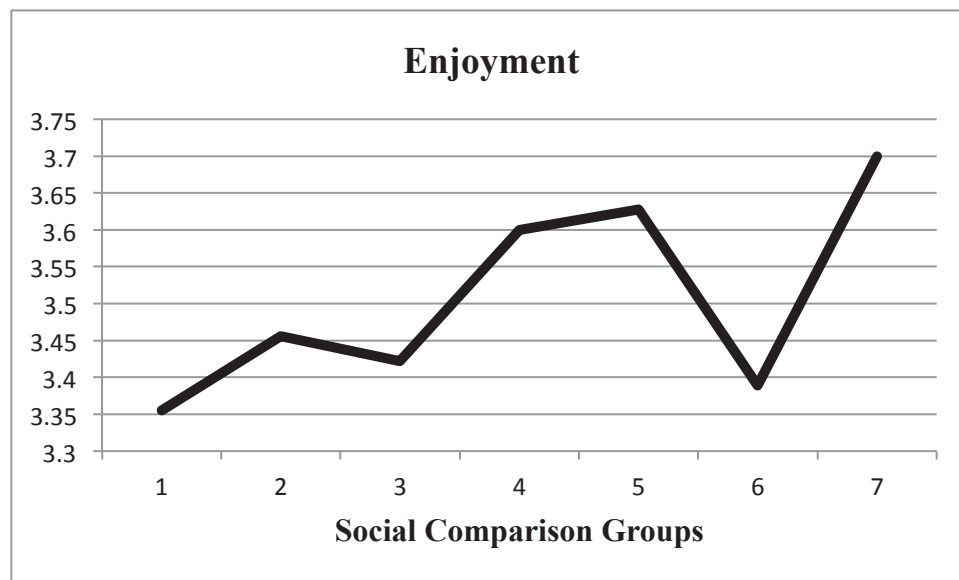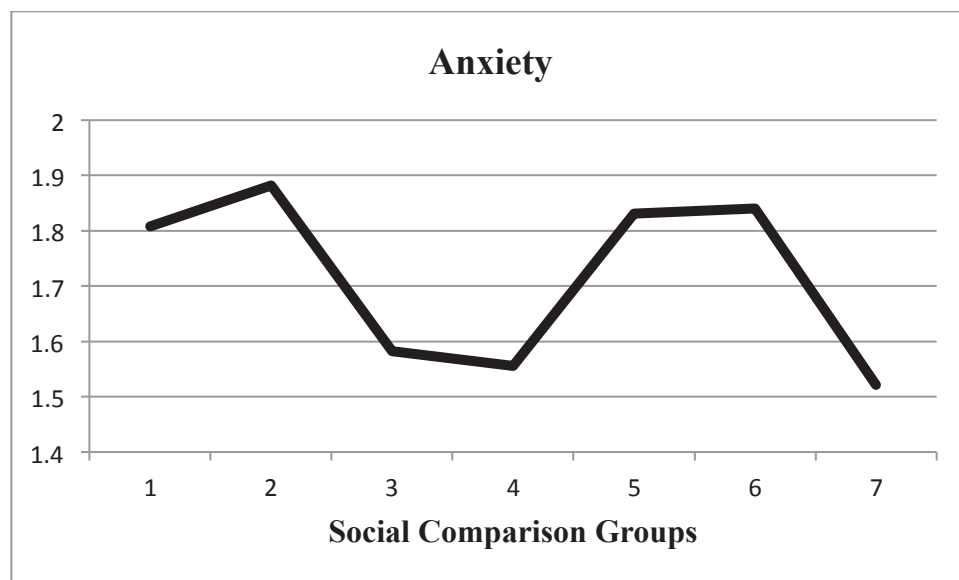*Figure 7.* ANCOVA of comparison types and enjoyment.

Figure 9. ANCOVA of comparison types and anxiety.

comparisons in general (Cluster 6, $M = 1.84$, $SD = 0.69$) reported high levels of anxiety. In

contrast, teachers who reported low levels of horizontal comparisons (Cluster 3, $M = 1.58$, $SD =$

0.63), teachers who reported more upward comparisons (Cluster 4, $M = 1.56$, $SD = 0.64$), and
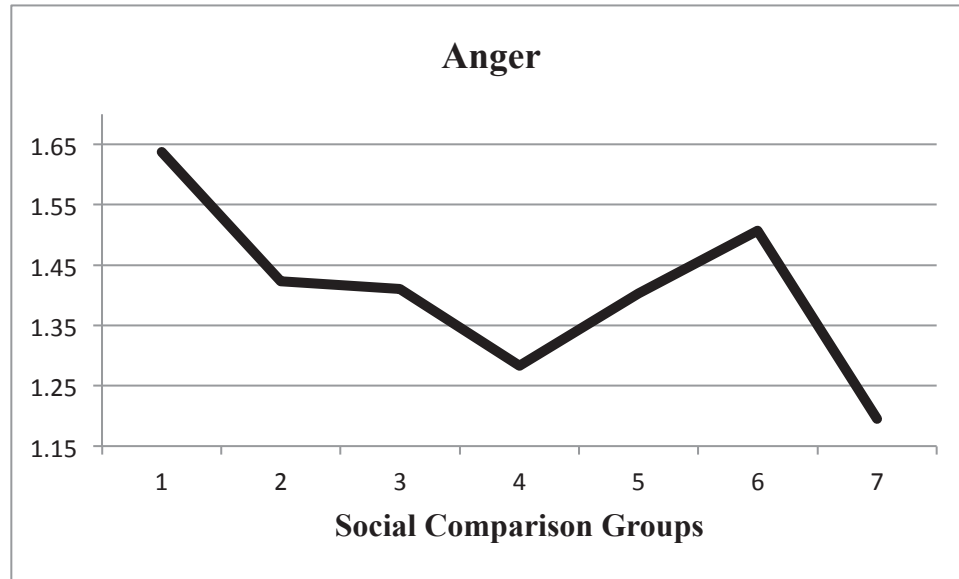
Anger

Figure 9. ANCOVA of comparison types and anger.

those who both upward and downward comparisons (Cluster 7, $M = 1.52$, $SD = 0.64$) reported

lower levels of anxiety (as seen in Figure 8).

Finally, ANCOVA results showed that for anger, $F(6,373) = 3.93$ $p = .01$, teachers who

had average levels of social comparisons (Cluster 1, $M = 1.64$, $SD = 0.58$), and those making few

comparisons in general (Cluster 6, $M = 1.51$, $SD = 0.50$) reported higher levels of anger, whereas

teachers who reported more upward comparisons (Cluster 4, $M = 1.28$, $SD = 0.46$), and those

who both upward and downward comparisons (Cluster 7, $M = 1.20$, $SD = 0.33$) had lower levels

of anger (as represented in Figure 9).

Overall, these findings suggest in addition to the psychological benefits of upward

comparisons, as well as upward combined with downward comparisons, refraining from

horizontal comparisons is generally beneficial for adjustment in teachers. Additionally, teachers

who had average levels of, or did not report engaging in social comparisons more generally,

reported lower levels of burnout, job satisfaction, and enjoyment, as well higher scores on

intentions to quit, anxiety, and anger, whereas teachers who reported higher levels across the

three types of social comparison reported higher adjustment levels than most other groups.

Discussion

Teachers undergo various stressors, such as misbehaving and poor-performing students, and despite evidence showing social comparisons to be effective as a coping strategy (Buunk et al., 1990; Corcoran et al., 2011) and related constructs showing similar benefits for teachers (e.g., collective self-esteem, collective self-efficacy, relatedness, etc.), social comparisons have not been previously explored as motivational strategy for teachers. Following from previous research has found upward, horizontal, and downward comparisons to be effective in various populations for promoting psychological adjustment (e.g., children; Goodenow, 1993, Huguet et al., 2001; older adults; Bailis et al., 2008), this study investigated the effects of social comparisons as motivational strategies among teachers on critical indicators of psychological adjustment, behavioral intentions to quit, and emotions concerning instruction. Overall, the results provide empirical support for further exploration of social comparisons in teachers as a coping strategy given the significant effects of each type being observed on critical outcomes in teachers. More specifically, the study hypotheses were generally supported in that social comparisons were found to significantly predict adjustment, behavioral intentions, and emotions in teachers, with efforts to evaluate oneself against others having both beneficial and detrimental effects for teachers depending on the direction of comparison

Overview of Variable-Centered Results

Hypothesis 1: Downward Social Comparisons

The first hypothesis of this study anticipated that despite the varied research on downward comparisons, comparing oneself to worse-off others would be a beneficial coping strategy for teachers. To date, empirical studies had shown mixed findings as to the benefits of this coping strategy for students and older adults (Heckhausen & Schultz 1995; Lockwood &

Kunda, 1997). The present results is thus consistent with prior research in showing that

although teachers who frequently compared themselves with worse-off teachers had higher

levels of job satisfaction, they also reported significantly higher levels of anger thus providing

partial support for the first hypothesis. Overall, downward social comparisons did not have

significant effects on any other measure assessed, underscoring its limited utility for teachers for

contributing to adjustment. Moreover, the present findings are inconsistent with findings by

Locke (2003) in that downward comparisons did not contribute to better adjustment, but instead

contributed to higher levels anger. Research by Buunk et al. (2003) showed that individuals who

feel as though they have little control over their health are more likely to see downward social

comparisons as threatening, explaining why the present study showed elevated levels of anger

following a downward comparison.

Hypothesis 2: Horizontal Social Comparisons

According to the second hypothesis, horizontal comparisons were expected to predict

lower burnout and greater emotional well-being based on work by Skaalvik and Skaalvik (2007)

showing teachers who feel they belong to a group to report lower burnout and higher job

satisfaction. However, in contrast to the aforementioned benefits of social comparison strategies

for teachers, horizontal comparisons were found to be particularly maladaptive for teachers in

predicting poorer levels on all outcomes assessed. More specifically, horizontal comparisons

were found to predict lower job satisfaction as well as stronger intentions to quit, greater

emotional exhaustion and depersonalization, as well as lower personal accomplishment and

emotional well-being (lower enjoyment, higher anger and anxiety). These findings therefore

directly contradict the second study hypothesis and are inconsistent with previous research

showing teachers' feelings of belongingness to be positively associated with job satisfaction (Skaalvik & Skaalvik, 2011).

However, these results are nonetheless directly consistent with findings from Klassen et al. (2012) with teachers showing relatedness with colleagues to negatively predict work engagement and enjoyment. To explain this result, Klassen et al. (2012) suggested that comparing oneself with other teachers who are also perceived as similarly unsuccessful should not be equated with teachers' relatedness with their students (e.g., social goals, Butler et al., 2012). In addition, horizontal comparisons have been found to strongly correlate with negative emotions, with sharing an undesirable attribute with similar others having been found to produce feelings of insecurity (Locke, 2005). This finding may explain why comparing with colleagues produced anger and anxiety, as the scale items were specific to social comparisons with teachers who were also perceived as failing themselves (e.g., scale item: "If I don't reach my teaching goals, I will tell myself that many other teachers are in the same situation"). Finally, there may also be other confounding variables not assessed in this study that may be influencing the observed relationship between horizontal comparisons and adjustment outcomes. More specifically, as evidenced by prior research showing psychosocial variables such as self-efficacy, achievement goals, and perceived control to moderate the effects of social comparisons (e.g., Butler, 1992), it is possible that similar moderation effects may account for negative effects in these studies. For example, as individuals with performance goals are more likely to compete against others when comparing to them (Ames, 1984), it is possible that performance-oriented instructors may be primarily sensitive to the ego-threatening effects of horizontal social comparisons. As such, further research with additional variables is required to fully understand for whom and why horizontal comparisons are detrimental for adjustment outcomes in teachers.

Hypothesis 3: Upward Social Comparisons

Finally, the third hypothesis proposed that upward social comparisons would be beneficial for teachers based on findings showing that focusing on a positive role model, or another individual who has overcome challenges, can enhance motivation (Tesser, 1988). In clear support of this hypothesis, the current study showed that upward social comparisons were by far the most effective motivational strategy across all the outcomes assessed, and were the only type of social comparison strategy to predict lower attrition intentions in teachers. More specifically, upward comparisons predicted higher job satisfaction and personal accomplishment, lower quitting intentions, optimal teaching emotions (enjoyment, anger, anxiety), as well as lower exhaustion and depersonalization. These results are consistent with theoretical assertions that self-efficacy in teachers can be facilitated through vicarious experience, which entails watching others teach in skillful ways (Bandura, 1977; Tschannen-Moran et al., 1998; see also Kunter et al., 2011), as well as research on older adults for whom a focus on other adults who had overcome illness was found to contribute to greater hope (Bailis et al., 1997). Taken together, upward social comparisons were found to be the best strategy for teachers to sustain their motivation and promote positive emotions.

Overview of Person-Centered Results

The findings obtained via cluster analysis largely replicated the variable-centered regression analysis results, in that upward comparisons appeared to be the most beneficial type of comparison method for teachers. Moreover, horizontal comparisons were found to reduce the effectiveness of upward comparisons, which is consistent with the regression results. The implications of the cluster analysis are therefore threefold. First, despite our evidence showing that upward social comparisons are beneficial for teachers, the upward social comparison group

had one of the lowest numbers of teachers. As such, this finding suggests that because reliance on this effective strategy is relatively uncommon, there exists a general need for motivational interventions to specifically encourage this motivational strategy among teachers. Second, these findings further suggest that motivational interventions should be developed that encourage teachers to reduce their use of horizontal comparisons, given their potential to cancel out the effects of upward comparisons. Finally, given that downward social comparisons appeared to have some benefits, particularly in combination with upward social comparisons, these findings suggest that this type of comparisons may also be encouraged as a way of promoting psychological adjustment in teachers.

Limitations and Future Directions

The current study had four main limitations. First, the study employed a newly developed scale adapted from the Optimization of Primary and Secondary Control measure (OPS; Haase et al., 2008) that consisted of only two items per social comparison measure, with items for the horizontal comparisons measure not being highly correlated. As a result, the horizontal comparisons measure demonstrated lower reliability than the other measures, most likely as a consequence of the conflicting nature of scale items. Whereas the first question addressed teachers failing to meet their personal goals, the second question focused on how teachers respond to difficulties with their students. As such, it is possible that only one of the two items may be primarily responsible for the negative effects of horizontal comparisons on adjustment in teachers (an assertion supported by post-hoc correlations showing the goals item to be more strongly correlated with burnout than the student-focussed item, e.g. $r = -.12$, vs. -.04 for personal accomplishment). Future research to better develop self-report measures of social comparisons for teachers is therefore encouraged to replicate these findings with more reliable

measures. In addition, to further understand horizontal comparisons, the evaluation of social

goals (Butler, 2012) alongside the comparison measures is also recommended to better determine

how these constructs are differentiated.

The second limitation of this study was the lack of mediating or moderating variables

investigated. Ample research suggests that other variables can moderate the use of certain types

of social comparisons, such as downward comparisons occurring more frequently when

individuals are happy and have high self-esteem (Wheeler & Miyake 1992), are high in

collective self-esteem (Balis & Chipperfield, 2007), or report feeling low in perceived control

(Chipperfield et al., 2013), psychologically threatened (Will, 1981), or psychologically close to

others (Lockwood et al., 2004). Research by Buunk et al. (1990) further suggests that negative

affect is not a direct consequence of the type of social comparison used, but is instead influenced

by moderating variables such as self-esteem, marital dissatisfaction, and marital uncertainty. It is

anticipated that future research on the moderators and mediators of the relations between social

comparisons and adjustment teachers may shed more light on the mixed findings observed.

An additional limitation is the cross-sectional nature of the study data in that these

predictors may have different effects on the outcomes assessed when assessed longitudinally.

Future research to investigate the long-term consequences of certain types of comparisons is

warranted to replicate the present findings over a longer period of time (e.g., six months later).

Different methodologies could be employed in future studies to investigate the effects of social

comparison use. For example, one could study the frequency with which teachers used a specific

type of comparison in a real-life classroom setting via experience sampling methods in order to

more accurately assess the extent to which these social comparison strategies are utilized by

teachers on a daily basis (cf. Goetz, Frenzel, Stoeger, & Hall, 2010). Finally, with regard to the

study sample, the present study recruited teachers from primary and secondary schools in both Ontario and Quebec, with teachers at post-secondary institutions recruited only from Quebec. Future studies evaluating junior college instructors from Ontario are therefore also recommended.

Given the present results showing teachers to benefit from making upward social comparisons, future research aimed at promoting a focus on role models among teachers, and explicitly encouraging teachers to consider their current challenges in light of other who have persevered, is strongly recommended. More specifically, teachers could be provided an opportunity to reflect on a teacher they admire as part of a professional development seminar, or dialogue with an experienced teacher who has undergone and overcame setbacks, so as to provide a positive role model that could motivate sustained adjustment and persistence in the face of occupational stress. In so doing, researchers could experimentally evaluate the long-term effects of upward social comparisons and inform the development of orientation and development programs for teachers aimed at reducing attrition and job stress.

Conclusions

One of the main goals of the present study was to identify psychological causes for maladjustment and attrition so as to prevent its occurrences and assist individuals in dealing with the stress of the teaching profession. The present results clearly demonstrate the damaging consequences of comparing onself with other teachers, as well as the notable benefits of comparing onself with other more experienced role models who have overcome teaching-related challenges. Overall, these findings illustrate the importance of evaluating the types of social comparisons made by teachers as motivational strategies for coping with occupational stress in highlighting not only the benefits of underexplored upward comparisons, but also the limited

gains associated with downward comparisons and surprising risks of horizontal comparisons.

Future research aimed at promoting an explicit focus on role models in instruction is

recommended to assist in effort to improve adjustment and attrition in struggling teachers.

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Appendix A

Consent Form: Teachers
Department of Educational and Counselling Psychology

TITLE OF STUDY: Motivation in Teachers: Mediation and Intervention Effects

INVESTIGATORS: Sonia Rahimi, B.A. (M.A. student), Hui Wang, B.A., B.Sc. (M.Ed student), Nathan Hall, Ph.D. (faculty supervisor).

(Note: The consent form will be placed on official McGill letterhead)

Purpose of the Study
The purpose of this study is two-fold. First, we want to evaluate the effects of motivational variables in teachers on their well-being and classroom practices. Second, our aim is to obtain feedback from teachers on how to best motivate struggling students.

Participants
You are being asked to participate in the study because you are a pre-service or practicing teacher.

Procedures
If you would like to participate, we will ask you to complete a questionnaire including items requesting basic background information, as well as items that assess motivation, emotions, and psychological well-being. You may also be asked to review additional readings and provide feedback related to motivation in students. This study consists of two parts: Part 1 requires the completion of a questionnaire and feedback on informational content (approx. 15-30 minutes), and Part 2 will be conducted in 6 months (approx. 15 minutes). The study is completed entirely online to facilitate accessibility (e.g., smartphone users).

Benefits of Participation
Possible benefits from study participation include an opportunity to reflect on your motivation as a teacher and your teaching practices.

Risks of Participation
There are risks involved in all research studies. This study is anticipated to include only minimal risks. A possible risk of participation in this study is mild anxiety that may be associated with completing a questionnaire on emotion-related topics (e.g., anger, anxiety).

Cost /Compensation
Participants who complete Part 1 of the study will be entered into a draw for $500 (odds of winning are approx. 1 in 75). Participants who also complete Part 2 will be entered into a second

draw for $500 (odds of winning are approx. 1 in 50). Participants who complete both parts are thus eligible to win a combined total of $1,000 for their participation.

Contact Information
If you have any questions or concerns about the study, you may contact the principle investigator Sonia Rahimi at <u>sonia.rahimi@mail.mcgill.ca</u>, the co-investigator Hui Wang at <u>hui.wang4@mail.mcgill.ca</u>, or the supervisor Dr. Nathan Hall at (514)-398-3452, <u>nathan.c.hall@mcgill.ca</u>. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact **the McGill REB Office at (514) 398-6831.**

Voluntary Participation
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the study.

Confidentiality
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at McGill for at least 5 years after completion of the study. After the storage time the information gathered will be destroyed. All identifying information will be destroyed after the study has been completed.

Participant Consent:
I have read the above information and agree to participate in this study.
(Participants will be asked to enter their names and the date electronically).

_____   _____
Participant Name   Date

Appendix B

RECRUITMENT EMAIL

This email is to inform you of an opportunity to participate in a two-part study in exchange for the chance to win up to $1,000. The study is completed entirely over the Internet and consists of two parts.

Part 1 is available from now until XXX, 2013 and consists of a short questionnaire concerning motivation in teachers, and possibly a few readings about motivation in students. This first part will require about 15-30 minutes of your time, and will be available until XXX, 2013. For participants who complete Part 1, you will receive an email in April with a link to complete Part 2 requiring the completion of only a short questionnaire lasting approximately 15 minutes.

As compensation for participation, those who complete Part 1 will be entered into a draw for $500 (odds of winning are approx. 1 in 75). Participants who also complete Part 2 will be entered into a second draw for $500 (odds of winning are approx. 1 in 50). Participants who complete both parts are thus eligible to win a combined total of $1,000 for their participation.

If you are interested in participating, please click the link below to access the study website prior to XXX, 2013 :

      http://www.ame1.net/mcgillteacherstudy

If you have any questions about the study, please feel free to contact the principal investigator Sonia Rahimi at sonia.rahimi@mail.mcgill.ca or the study coordinator at nathan.c.hall@mcgill.ca. Thank you for your time and good luck!

Sincerely,

Dr. Nathan Hall
Department of Educational and Counselling Psychology
McGill University

Appendix C

QUESTIONNAIRE ITEMS

Demographics

_____ Age (in years)
_____ Gender (F or M)
_____ Marital Status
_____ Ethnicity
_____ Highest Level of Education
_____ Survey Method (computer, smartphone)
_____ Location
_____ School Name
_____ Years of Practice
_____ Primary/Preferred Subject of Instruction
_____ Primary/Preferred Level of Instruction (primary, secondary, post-secondary)

Job Satisfaction

Below are five statements on your job satisfaction. Please indicate your agreement with each item using the following 1-7 scale:

1. Strongly disagree
2. Disagree
3. Slightly disagree
4. Neither agree nor disagree
5. Slightly agree
6. Agree
7. Strongly agree

1. In most ways my job is close to my ideal.
2. The conditions of my job are excellent.
3. I am satisfied with my job.
4. So far I have gotten the important things I want in my job.
5. If I could live my life over, I would not change the choices made in my job.

4. How much can you do to help your students value learning?
5. To what extent can you craft good questions for your students?
6. How much can you do to get children to follow classroom rules?
7. How much can you do to calm a student who is disruptive or noisy?
8. How well can you establish a classroom management system with each group of students?
9. How much can you use a variety of assessment strategies?
10. To what extent can you provide an alternative explanation or example when students are confused?
11. How much can you assist families in helping their children do well in school?
12. How well can you implement alternative strategies in your classroom?

Intention to Quit

1. I think about quitting the teaching profession.

Never   Constantly
      1   2   3   4   5
2. I intend to quit the teaching profession.
 Very Unlikely   Certain
      1   2   3   4   5
3. I intend to move into another profession/occupation.
 Very Unlikely   Certain
      1   2   3   4   5

Burnout

Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write a "0" (zero) before the statement. If you have had this feeling, indicate how often you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way.

How often:
0. Never
1. A few times a year or less
2. Once a month or less
3. A few times a month
4. Once a week
5. A few times a week
6. Every day

How Often
 0–6 Statements

1. _____ I feel emotionally drained from my work.
2. _____ I feel used up at the end of the workday.
3. _____ I feel fatigued when I get up in the morning and have to face another day on the job.
4. _____ I can easily understand how my students feel about things.
5. _____ I feel I treat some students as if they were impersonal objects.
6. _____ Working with people all day is really a strain for me.
7. _____ I deal very effectively with the problems of my students.
8. _____ I feel burned out from my work.
9. _____ I feel I'm positively influencing other people's lives through my work.
10. _____ I've become more callous toward people since I took this job.
11. _____ I worry that this job is hardening me emotionally.
12. _____ I feel very energetic.
13. _____ I feel frustrated by my job.
14. _____ I feel I'm working too hard on my job.
15. _____ I don't really care what happens to some students.
16. _____ Working with people directly puts too much stress on me.
17. _____ I can easily create a relaxed atmosphere with my students.
18. _____ I feel exhilarated after working closely with my students.
19. _____ I have accomplished many worthwhile things in this job.
20. _____ I feel like I'm at the end of my rope.
21. _____ In my work, I deal with emotional problems very calmly.
22. _____ I feel students blame me for some of their problems.

Teaching-related Emotions

1 = *strongly disagree* to 4 = *strongly agree*

<u>Enjoyment</u>

I generally enjoy teaching.
I generally have so much fun teaching that I gladly prepare and teach my lessons.
I generally teach with enthusiasm.
I often have reasons to be happy while I teach.

<u>Anxiety</u>

I generally feel tense and nervous while teaching.
I am often worried that my teaching isn't going so well.
Preparing to teach often causes me to worry.
I feel uneasy when I think about teaching.

<u>Anger</u>

I often have reasons to be angry while I teach.
I often feel annoyed while teaching.
Sometimes I get really mad while I teach.
Teaching generally frustrates me.

Motivational Strategies

The following statements are about what is important to you as a teacher. There are no right or wrong answers. Please circle a number to indicate you agreement or disagreement with each statement.

1. Strongly disagree
2. Somewhat disagree
3. Neither agree nor disagree
4. Somewhat agree
5. Strongly agree

<u>Horizontal Social Comparison</u>

If I don't reach my teaching goals, I will tell myself that many other teachers are in the same situation.
When I have difficulties with my students, I keep in mind that other teachers are struggling too.

<u>Upward Social Comparisons</u>

When I experience teaching difficulties, I remind myself of successful teachers who overcame similar setbacks.
When faced with teaching challenges, I remind myself of role models who went through similar circumstances.

<u>Downward Social Comparisons</u>

When I experience teaching setbacks, I remind myself that I am better-off than other teachers in many ways.
When dealing with teaching challenges, I remind myself that other teachers have even worse experiences.