Teaching and Teacher Education 25 (2009) 518–524

Contents lists available at ScienceDirect

Teaching and Teacher Education

journal homepage: www.elsevier.com/locate/tate

Does school context matter? Relations with teacher burnout and job satisfaction

Einar M. Skaalvik*, Sidsel Skaalvik

Norwegian University of Science and Technology, Dragvoll, 7491 Trondheim, Norway

ARTICLE INFO

Article history:
Received 22 April 2008
Received in revised form
8 August 2008
Accepted 8 December 2008

Keywords:
Teacher job satisfaction
Teacher burnout
Teacher autonomy
Time pressure
Supervisory support
Teachers' relations to parents

ABSTRACT

This study examined relations between teachers' perception of the school context, teacher burnout, and teacher job satisfaction. Participants were 563 Norwegian teachers in elementary school and middle school. Four aspects of teachers' perception of the school context (supervisory support, time pressure, relations to parents, and autonomy) and three dimensions of teacher burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment) were measured. The data were analyzed by means of structural equation modelling using the AMOS 5 program. Teachers' job satisfaction was directly related to two of the dimensions of burnout (emotional exhaustion and reduced personal accomplishment) and indirectly related to all aspects of the school context, through emotional exhaustion and reduced personal accomplishment. The three dimensions of burnout were differently related to the school context variables. Emotional exhaustion was most strongly related to time pressure whereas depersonalization and reduced personal accomplishment were most strongly related to teachers' relations with parents. Implications for both research and educational practices are discussed.
© 2008 Elsevier Ltd. All rights reserved.

1. Introduction

Research in different cultures indicates that school teachers are among those professionals with the highest level of job stress (Stoeber & Rennert, 2008). As a result, many teachers experience burnout, decreased job satisfaction, and choose early retirement (e.g., Cano-Garcia, Padilla-Munoz, & Carrasco-Ortiz, 2005; Hakanen, Bakker, & Schaufeli, 2006). The causes of stress may include increased workload, students with behavioural problems, problem in the parent–teacher relationship, conflicts in cooperating with colleagues, lack of support from the school leadership, and lack of autonomy (Skaalvik & Skaalvik, 2007). Alternatively, supervisory support, autonomy and positive relations with colleges and parents may be regarded as job resources which may increase job satisfaction and reduce the risk of experiencing burnout. The purpose of this study was to explore relations between teachers' perception of job related demands and resources (perceived school context) and measures of burnout and job satisfaction.

1.1. Teacher burnout and job satisfaction

According to Jennett, Harris, and Mesibov (2003) all teachers experience stress in their work. Most teachers cope successfully with job related stress, for instance through active problem solving, social and emotional support from colleagues, reorganizing the teaching situation, cooperating with parents, or changing their teaching strategy. However, burnout may be the endpoint of coping unsuccessfully with chronic stress (Jennett et al., 2003).

Burnout is conceptualized as resulting from long term occupational stress, particularly among human service workers, including teachers (Jennett et al., 2003). It is often described as a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996). Maslach et al. (1996) identify emotional exhaustion as the key aspect of burnout whereas Pines and Aronson (1988) include physical exhaustion characterized by low energy and chronic fatigue. Another aspect of burnout is depersonalization, which in teacher burnout refers to negative, cynical attitudes and feelings about ones students or colleagues. Reduced personal accomplishment refers to a tendency that teachers evaluate themselves negatively as well as a general feeling that they are no longer doing a meaningful and important job.

Research indicates that the three dimensions of burnout cannot be added up to a single measure (Byrne, 1994). Lee and Ashforth (1996) found that personal accomplishment was weakly correlated with the other two dimensions. Also, some researchers regard emotional exhaustion and depersonalization as the central elements of burnout (e.g., Schaufeli & Salanova, 2007).

It is also important to note that burnout develops gradually and is an end stage in a chain of reactions (Peeters & Rutte, 2005).

* Corresponding author. Tel.: +47 73591954; fax: +47 73591890.
E-mail address: einar.skaalvik@svt.ntnu.no (E.M. Skaalvik).

0742-051X/$ – see front matter © 2008 Elsevier Ltd. All rights reserved.
doi:10.1016/j.tate.2008.12.006

Schaufeli and Enzmann (1998) describe the development of burnout in three stages. The first stage is characterized by stress which is a result of an imbalance between resources and demands. In the second stage the individual experiences emotional tension, fatigue and exhaustion, often accompanied by a number of additional problems such as sleeping problems, headache, and forgetfulness (Pines & Aronson, 1988). The third stage consists of a number of changes in attitudes and behaviour.

Studies in different cultures show that measures of teacher burnout predict both subjective and objective health as well as teachers' motivation and job satisfaction. For instance, Hakanen et al. (2006) showed that both emotional exhaustion and depersonalization correlated negatively with self-rated health as well as work ability among Finnish teachers. Available research also shows a negative relation between burnout and motivation (Hakanen et al., 2006; Schaufeli & Salanova, 2007). Moreover, Leung and Lee (2006) found, in a study of teachers in Hong Kong, that the exhaustion dimension of burnout predicted teachers' intentions of leaving the profession, which is related to job satisfaction (Hall, Pearson, & Carroll, 1992).

Even though previous research indicates that measures of burnout predict low job satisfaction, few studies have explored the relative impact of the different dimensions of teacher burnout on job satisfaction. One purpose of this study was to explore relations between the three dimensions of burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment) and teachers' job satisfaction.

1.2. Perception of school context

Another purpose of this study was to explore if teachers' perception of contextual variables at school predicted teacher burnout and job satisfaction. Some researchers have analyzed negative aspects of the school context focussing on job related causes of stress, for instance work overload, student misbehaviour, lack of autonomy, or conflict with colleagues (e.g., Kokkinos, 2007; Malach-Pines, 2005). Other researchers (e.g., Hakanen et al., 2006; Schaufeli & Bakker, 2004) have analyzed a combination of positive and negative aspects of the school context, for instance by discriminating between "job demands" (e.g., work overload) and "job resources" (e.g., social support), or just analyzing a number of job characteristics (Maslach, Schaufeli, & Leiter, 2001).

The school context variables examined in this study were supervisory support, time pressure, relations to parents, and autonomy. Educational researchers have noticed an acceleration of working speed among teachers and an increasing number of work assignments over the last years resulting in less time for rest and recovery (Hargreaves, 2003; Lindqvist & Nordänger, 2006). Consistent with these observations time pressure and work overload have been found to correlate positively with teacher burnout (Skaalvik & Skaalvik, 2008; Hakanen et al., 2006; Kokkinos, 2007; Peeters & Rutte, 2005; Schaufeli & Bakker, 2004).

Today, the level of education in the parent population is much higher than it was some decades ago. Possibly for that reason parents involve themselves more in their children's education, even in the daily work at school, which in itself may be a source of stress and dissatisfaction for some teachers (BlackBranch, 1996). In a study of German teachers Stoeber and Rennert (2008) also found that pressure and demands from parents positively predicted teacher burnout. More seriously, experiencing that one is not trusted by the parents, that they are critical, or that cooperating with parents is difficult may be a serious strain on teachers with negative impact on burnout. It may increase anxiety and create a feeling that one is not doing a good job, resulting in lower self-efficacy and need for self-protection, with serious consequences for teachers' attitudes and work morale.

Research shows that for well-educated workers autonomy is positively related to job satisfaction (Koustelios, Karabatzaki, & Kouisteliou, 2004). Nevertheless, research indicates an international tendency that teacher's autonomy is diminishing (Ballet, Kelchtermans, & Loughran, 2006). According to the self-determination theory (Deci & Ryan, 1985, 2000) autonomy is considered a basic psychological need. Decision latitude, which is a central element in the "Job Demand–Control Model" (Karasek, 1979; Karasek & Theorell, 1990), is also often operationalized as autonomy. According to this model work overload and lack of autonomy are predictive of strain (Peeters & Rutte, 2005). Research also reveals that the degree of autonomy perceived by teachers is indicative of their job satisfaction (Crosso & Costigan, 2007; Pearson & Moomaw, 2006). Lack of autonomy may mean that some teachers have to use teaching methods and work towards goals that they do not believe in or that would not be their personal priority. Autonomy may therefore be particularly important in the teaching profession. Supporting this notion Skaalvik and Skaalvik (2007) found positive zero-order correlations between teachers' feeling of having to organize teaching in ways they did not think was the best and all three dimensions of burnout. Moreover, Crosso and Costigan (2007) report that teacher's desire for autonomy was strongly related to their desire to do good work. Autonomy was seen as necessary to be able to address the changing needs of students.

Research also indicates that social climate and social support are negatively related to burnout. Schaufeli and Bakker (2004) found negative zero order correlations between social support from colleagues and both exhaustion and depersonalization whereas Hakanen et al. (2006) found negative zero order correlations between supervisory support and the same dimensions of teacher burnout (see also Leung & Lee, 2006). By means of regression analysis Cano-Garcia et al. (2005) also found that teachers' relations to the school administration significantly predicted the exhaustion dimension of teacher burnout.

1.3. Purposes of the present study

One purpose of this study was to explore relations between the three dimensions of burnout and teachers' job satisfaction. A second purpose of the study was to explore if teachers' perception of contextual variables at school predicted teacher burnout and job satisfaction. A third purpose was to test if possible relations between school context variables and teachers' job satisfaction were mediated through teacher burnout. Additionally, we tested if teachers' perception of school context variables, the dimensions of teacher burnout, and teacher job satisfaction varied significantly with gender, size of school, and number of years in the teaching profession.

2. Method

2.1. Participants and procedure

Participants in this study were 563 teachers from 28 elementary (primary) schools and middle (lower secondary) schools (1st–10th grade) in five middle sized cities in Norway. These cities had a population between 20,000 and 50,000 inhabitants. At each school a particular time was set aside for all teachers to respond to the questionnaire and the teachers were instructed not to discuss the items or to collaborate. All teachers who were present at the school at the time of the data collection participated in the study.

In Norway, children start school the calendar year they are 6, and seventh grade is the last year in elementary school. Elementary school and middle school in Norway are founded on the principle of equity in a school system based on the same National Curriculum,

and the state bears the overall responsibility for the Education Act with regulations, content, and financing (Norwegian Ministry of Education and Research, 2007). The Norwegian Parliament and the Government define the goals and the subject curricula include competence aims for the pupils after grades 4, 7, and 10. The school districts, the particular schools, teacher teams, or the individual teachers are responsible for choosing teaching methods to reach the competence aims. However, there are great variations regarding at which level these decisions are made.

Norway has a scattered population and many of the schools are small. In the school year 2007–2008 34.4 percent of the schools had less than 100 students and 26.2 percent had more than 300 students (Utdaningsdirektoratet, 2008). In terms of student distribution this means that 8.3 percent of the students attended schools with less than 100 students and 53.5 percent attended schools with more than 300 students. As a rule, students with special needs attend their local elementary and middle school, and 14.7 percent of all teaching hours are used for special education in regular school. On average, there were 13.9 students per teacher in Norwegian school in 2006–2007. If we disregard special education the average number of students per teacher was 17.1 (Utdaningsdirektoratet, 2008).

The sample in this study consisted of 67.5% female teachers. The age of the teachers varied from young teachers (the youngest was 25 years old) to teachers close to retirement (the oldest was 66 years). The mean age was 44.5 years. The average number of years in the teaching profession was 15.29. The average number of students in the schools was 341. The schools varied with respect to size from schools with 8 teachers to schools with 60 teachers with an average of 34.16 teachers. The smallest schools had fewer students per teacher than the largest schools but the difference was small. For instance, the schools with 15 teachers or less had an average of 11.3 students per teacher whereas the schools with 50 students or more had an average of 14.0 students per teacher, special education included. Fifty percent of the teachers in the sample worked in elementary schools (grade 1–7), whereas 35% worked in middle schools (grade 8–10) and 15% in combined elementary schools and middle schools.

2.2. Instruments

2.2.1. Teacher burnout

Teacher burnout was measured by means of a short and modified Norwegian version of the 22-item Maslach Burnout Inventory – Educators Survey (MBI: Maslach et al., 1996). The original scale measures three dimensions of teacher burnout: Emotional Exhaustion (nine items), Depersonalization (five items), and Reduced Personal Accomplishment (eight items). Our analyses were based on a short (12-item) version of the MBI. The scale was reduced as part of an attempt to end up with a reasonable size questionnaire that teachers were willing to respond to. Based on data from a previous study (Skaalvik & Skaalvik, 2007) we found that the reduced scales correlated very strongly with the original scales; the correlations were .96, .81, and .92 for emotional exhaustion, depersonalization, and reduced personal accomplishment, respectively. Participants rated statements indicating that their work makes them feel emotionally drained or exhausted (emotional exhaustion, five items), that they do not care about some students (depersonalization, three items), and that their jobs have allowed them to accomplish many things (personal accomplishment, five items). Responses in the original scale are given on a 7-point scale from "Never" (0) to "Every day" (7). In our modification responses were given on a 6-point scale from "False" (1) to "True" (6). The response scale was modified because several teachers in a previous study (Skaalvik & Skaalvik, 2007) indicated that they found the statements difficult to answer on a scale ranging from "Never" to "Every day". Responses to items measuring personal accomplishment were scored so that high scores indicated reduced feeling of accomplishment. Cronbach's alphas for emotional exhaustion, depersonalization, and reduced personal accomplishment were .89, .80, and .82. Cronbach's alpha is a statistical measure of the internal consistency of a scale and indicates the degree to which all items in the scale measure the same construct. Values of .70 or higher are considered satisfactory.

2.2.2. Job satisfaction

Job satisfaction is an ambiguous term (Evans, 1997) and has been studied both as an overall construct and as teachers' satisfaction with different circumstances. A problem with measuring teachers' satisfaction with different circumstances and letting those measures indicate overall job satisfaction, is that different circumstances may be important to different teachers. Therefore, the problem with such measures is that they overlook the fact that the impact of different circumstances on overall job satisfaction is dependent on how important each of the circumstances is to the individual teacher. Therefore, satisfaction with concrete circumstances should not be used as a measure of teachers' overall job satisfaction. Consequently, we measured teachers' overall job satisfaction or job enjoyment by means of three items: (a) "All things considered, how much do you enjoy working as a teacher?" Responses were given on a 5-point scale ranging from "Not at all" to "Very much". (b) "If you could choose occupation today, would you choose to be a teacher?" Responses were given on a 5-point scale ranging from "No, definitely not" to "Yes, without a doubt", and (c) "Have you ever thought about leaving the teaching profession?". Responses were given on a 5-point scale ranging from "All the time" to "Never". Cronbach's alpha for the 3-items scale was .71.

2.2.3. Perceived school context

Four dimensions of teachers' perception of school context variables were analyzed: (a) teachers' feeling of having cognitive and emotional support from the school leadership, that they could ask the school leadership for advise, and that their relation to the school leadership was one of mutual trust and respect (*Supervisory Support*), (b) teachers' feeling of having a heavy workload, having to prepare for teaching in the evenings and weekends, and having a hectic school-day with little time for rest and recovery (*Time Pressure*), (c) teachers' experience of being trusted by the parents, of communicating well with parents, and that cooperation with parents were easy and adaptive (*Relations to Parents*), and (d) teachers' feeling of having autonomy regarding choice of teaching methods, educational strategies and content within the limit set by the national curriculum (*Autonomy*).

Each of the four contextual variables was measured by three items. Examples of items are: "In educational matters I can always seek help and advice from the school leadership" (Supervisory Support), "Preparation for teaching must often be done after working hours" (Time Pressure), "I feel that the parents have trust in my teaching" (Relations to Parents), and "In my daily teaching I am free to choose teaching methods and strategies" (Autonomy). Responses were given on a 6-point scale from "False" (1) to "True" (6). The responses were scored so that high scores indicated strong feeling of Supervisory Support, high Time Pressure, positive Relations to Parents, and high degree of Autonomy. Cronbach's alphas for supervisory support, time pressure, relations to parents, and autonomy, were .83, .71, .81, and .73, respectively.

2.3. Data analysis

To explore relations between the variables we first estimated zero order correlations between the study variables. In addition to

the described variables we also included gender, number of years in the teaching profession, and size of school. The next step in the data analysis was to test two theoretical models by means of SEM analysis for latent traits (structural equation modeling) using the AMOS 5 program. The models are described in the Results section. SEM is a statistical methodology where the researcher defines a theoretical model of relations between the variables. It allows using two or more observed variables (e.g., items) as indicators of an unobserved underlying construct termed a latent variable. The theoretical or hypothesized model can be tested statistically to determine the extent to which it is consistent with the data or how well it fits the data. If the goodness of fit is adequate, the plausibility of the postulated relations among the variables is strengthened; if the fit is inadequate, the tenability of the postulated relations is rejected (Byrne, 2001). However, although SEM analysis tests how well a theoretical model implying causal relations between the variables fits the data, we warn against rigid causal interpretations. The statistical analysis merely shows the strength of relations among the variables when assuming a causal direction.

To assess model fit, we used well-established indices such as CFI, IFI, TLI, RMSEA, and the χ^2-to-df ratio. For the CFI, IFI, and TLI indices, values greater than .90 are typically considered acceptable and values greater that .95 indicate good fit to the data (Bollen, 1989; Byrne, 2001; Hu & Bentler, 1999). For well specified models, an RMSEA of .06 or less reflect a good fit (Hu & Bentler, 1999) and a value below .08 indicates a reasonable fit (Browne & Cudeck, 1993). For the χ^2-to-df ratio values of less than 3 are considered adequate (Kline, 1998).

3. Results

Table 1 shows correlations between the study variables as well as statistical means, standard deviations, and Cronbach's alphas. The correlations between the four perceived contextual variables varied from close to zero to moderate correlations. The strongest correlations were found between supervisory support and autonomy (.37), between supervisory support and time pressure (−.23), and between relations to parents and autonomy (.32). Time pressure was negatively but weakly related to autonomy (−.15) whereas it was positively, but weakly related to teachers' relations to parents (.09). Supervisory support was also positively but weakly related to relations to parents (.11).

The three dimensions of teacher burnout were positively but weakly correlated (between .16 and .41). All dimensions of burnout were negatively related to supervisory support, relations to parents, and autonomy, the correlations ranging from −.12 to −.56. Moreover, emotional exhaustion was positively and strongly related to time pressure (.53) whereas depersonalization and reduced accomplishment were practically unrelated to time pressure (.02 and −.01, respectively). Job satisfaction was negatively related to all three dimensions of teacher burnout (between −.28 and −.52) and most strongly to emotional exhaustion. Furthermore, job satisfaction was negatively related to time pressure (−.25) and positively related to supervisory support (.29), relations to parents (.25), and autonomy (.37).

Gender correlated weakly and close to zero with all study variables. It was significantly, but weakly and negligibly correlated only with depersonalization (.15) and relations to parents (−.08) showing a weak tendency that male teachers score higher on depersonalization and lower on relations to parents than female teachers. Size of school, measured as the number of teachers in each school, was significantly related to four of the study variables. It was weakly and negligibly related to job satisfaction (−.10), depersonalization (.09) and reduced accomplishment (.09). Size of school was also weakly related to supervisory support (−.29), showing a tendency that teachers' feeling of supervisory support decreased with the size of the school. Number of years in the teaching profession was weakly, but significantly related to several of the study variables. In particular, these correlations indicated weak tendencies that job satisfaction, the feeling of supervisory support, and feeling of having autonomy diminished with number of years in the profession. Moreover, two of the dimensions of burnout (emotional exhaustion and reduced accomplishment) increased significantly with number of years in the profession. However, these tendencies were very weak and practically negligible (.13 and .16, respectively).

The relations between the study variables were further analyzed by means of two SEM analyses for latent traits using the AMOS 5 program. We first tested a simple theoretical model (model A) with supervisory support as exogenous variable predicting time pressure, relations with parents, autonomy, and job satisfaction. Both direct and indirect relations (through time pressure, relations with parents, and autonomy) were tested between supervisory support and job satisfaction (see Fig. 1). None of the correlations between error terms were set free. The model had acceptable fit to the data, χ^2 (85, $N = 563$) = 235.33, TLI = .93, CFI = .95, IFI = .95, and RMSEA = .056. The χ^2-to-df ratio was equal to 2.77. As shown in Table 1 supervisory support was significantly related to all school context variables in the analysis. Because SEM analysis handles measurement errors more efficiently than zero order correlations

Table 1
Zero order correlations and descriptive statistics.

Study variables	1	2	3	4	5	6	7	8	9	10	11
1. Job satisfaction	–	.29	−.25	.25	.37	−.52	−.28	−.41	−.05	−.24	−.10
2. Supervisory support		–	−.23	.11	.37	−.29	−.17	−.23	.04	−.19	−.29
3. Time pressure			–	.09	−.15	.53	.02	−.01	−.01	.03	.01
4. Relations to parents				–	.32	−.12	−.39	−.56	−.08	.08	−.02
5. Autonomy					–	−.27	−.26	−.31	−.02	−.11	−.04
6. Emotional exhaustion						–	.16	.21	.01	.13	.00
7. Depersonalization							–	.41	.15	.02	.09
8. Reduced accomplishment								–	.03	.16	.09
9. Gender									–	−.02	.05
10 Years of experience										–	.06
11 Size of school											–
Mean	9.54	10.67	12.55	13.84	13.01	15.31	4.71	14.13	1.32	15.29	34.16
Standard deviation	2.10	3.42	2.98	2.12	2.54	4.85	1.55	3.46	.47	11.73	13.95
Cronbach's alpha	.72	.85	.73	.84	.74	.89	.80	.82	–	–	–

Note. Correlations > .08 are significant ($p > .05$). Years of experience = number of years in the teaching profession, Size of school = number of teachers in school. Females were scored 1 and males were scored 2.

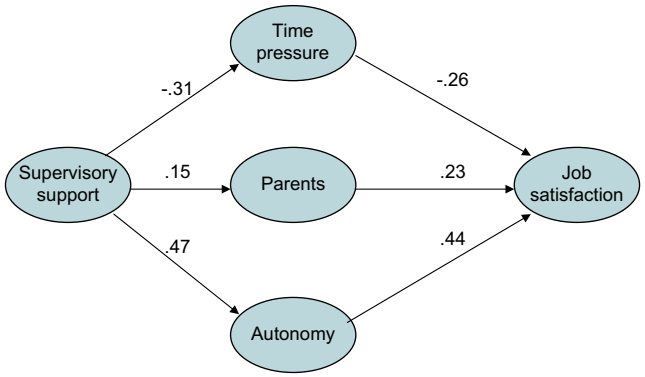


Fig. 1. Simple structural model (A) of relations between supervisory support, school context variables, and job satisfaction. (Standardized regression weights are reported. For simplicity, only significant regression coefficients are included in the figure.)

the relations shown in Fig. 1 were somewhat stronger than the correlations shown in Table 1. In particular, we should point out the strong relation (.47) between supervisory support and teachers feeling of autonomy and the moderate relation between supervisory support and teachers feeling of time pressure (−.31).

Whereas the zero order correlation between supervisory support and job satisfaction was .29 (see Table 1) the analysis of model A revealed no significant direct relation between supervisory support and job satisfaction. However, supervisory support was indirectly related to job satisfaction through all three contextual variables. Autonomy was particularly strongly related to job satisfaction (.44) whereas time pressure and relations to parents were moderately related to job satisfaction (−.26 and .23, respectively).

The next step in the analyses was to test an extended model (model B) in which we included the three dimensions of teacher burnout (Fig. 2). The three dimensions of teacher burnout were included to test possible indirect relations between school context variables and teacher job satisfaction mediated through teacher burnout. None of the correlations between error terms were set free. The model had acceptable fit to the data, χ^2 (338, $N = 563$) = 939.59, TLI = .90, CFI = .91, IFI = .91, and RMSEA = .057. The χ^2-to-df ratio was equal to 2.78.

Two of the dimensions of teacher burnout, emotional exhaustion and reduced accomplishment, predicted job satisfaction negatively (−.52 and −.31, respectively); stronger measures of burnout were associated with lower job satisfaction.

In model B no significant direct paths were found from supervisory support, time pressure, or relations to parents to job satisfaction. However, time pressure strongly predicted emotional exhaustion (.61). Hence, it was also indirectly related to job satisfaction, through emotional exhaustion. Both autonomy and teachers' relations to parents were significantly related to all dimensions of burnout. Also, these contextual variables were indirectly related to job satisfaction – mediated through emotional exhaustion and depersonalization. Moreover, in addition to the indirect relation autonomy was also directly related to job satisfaction (.25). Supervisory support was not directly related to any of the dimensions of teacher burnout or to job satisfaction. However, it was indirectly related to all dimensions of burnout, through time pressure, relations to parents, and autonomy. Moreover, supervisory support was also indirectly related to job satisfaction through the school context variables and two of the dimensions of burnout; emotional exhaustion and reduced accomplishment.

4. Discussion

The present study examined relations between school context variables, teacher burnout, and teacher job satisfaction. The initial analyses of zero order correlations also included gender of the teachers, number of years in the teaching profession, and size of school. These analyses showed that gender was practically unrelated to perceived school context, burnout, and job satisfaction. Similar findings were found for size of school; however, teachers feeling of having cognitive and emotional support from the school leadership decreased with size of school. Although this tendency was quite weak (−.29) it is interesting because Norwegian elementary and middle schools are generally small and the largest participating school had 60 teachers. We do not know if the relations would be stronger if the study had included even larger schools, which is an important question related to optimal size of schools. Even in school with 50–60 teachers it is probably practically impossible for the principal to guide and support individual teachers. Years of experience as a teacher was weakly, but negatively related to job satisfaction (−.24). This indicates a weak

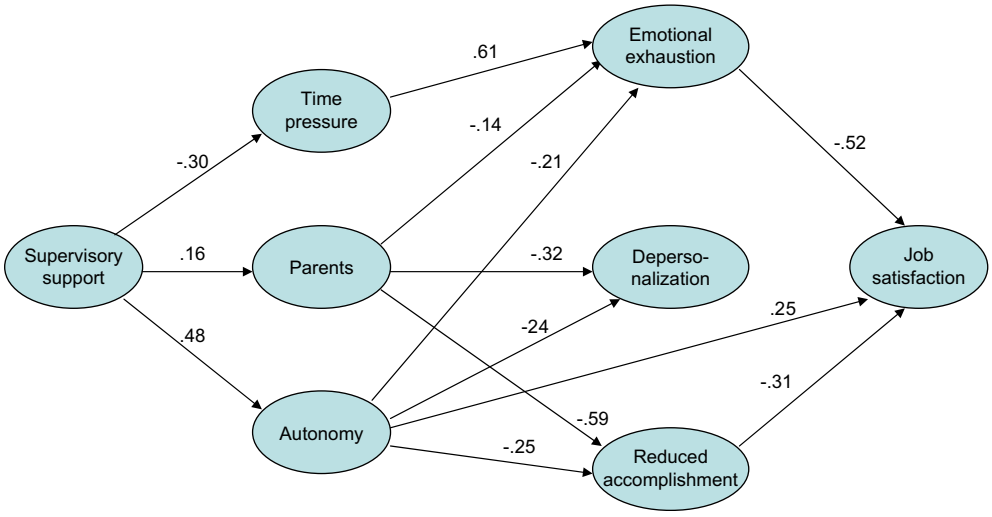


Fig. 2. Extended structural model (B) of relations between supervisory support, school context variables, teacher burnout, and job satisfaction. (Standardized regression weights are reported. For simplicity, only significant regression coefficients are included in the figure.)

tendency that teachers become less satisfied with working as a teacher. Although the tendency is weak it should be taken seriously. However, the present data do not allow further speculation regarding the relation between age and job satisfaction.

The initial analysis also showed that teachers' perception of the school context variables (supervisory support, time pressure, relations to parents, and autonomy) was weakly to moderately correlated. This is a strong indication that teachers assess these contextual variables independently of each other and that teachers' evaluation of these variables does not mirror general attitudes and opinions of school in general or the school where they are working. Combined with the high internal consistency of each measure the low correlations between the school context variables also verify the validity of these measures. Moreover, the low correlations show that school context should not be added up to a single measure. For research purposes this means that different school context variables should be analyzed as separate measures and not by summing different items or scales into general measures of job demands and job resources. Although this is done by several researchers (e.g., Hakanen et al., 2006), the present study strongly indicates that such a procedure is inadequate in order to understand relations between school context variables and teachers cognitive and emotional responses.

A practical implication of the low correlations between the school context variables is that in working to improve teachers' working conditions and job satisfaction one also has to conceptualize school context as a multidimensional construct and work to improve a variety of circumstances. The weak correlation between the school context variables indicates that improving one aspect of the school context will do little to change teachers' perception of other school context variables. Furthermore, because different school context variables are differently related to the three dimensions of teacher burnout, changing one school context variable may not influence all dimensions of teacher burnout.

Which circumstances (or school context variables) are the strongest sources of burnout and reduced job satisfaction may probably vary from school to school. For instance, disciplinary problems may be the strongest source of time pressure and emotional exhaustion at one school whereas responsibility for a large number of students with learning disabilities may be the strongest source of emotional exhaustion at another school. At a third school lack of autonomy may be the strongest source of frustration and emotional exhaustion even though we have shown that the general tendency, when looking at a large number of schools, is that time pressure is the strongest source. Though this is speculation beyond the present data analysis, we suggest that school principals explore sources of stress, burnout, and reduced job satisfaction at their school and that educational researchers develop "easy to use" measures for this purpose.

The correlations between the three dimensions of teacher burnout were low and ranged from .16 to .41. Thus, the initial analysis verified previous research showing that the three dimensions of teacher burnout cannot be added up to a single measure.

We tested two theoretical models by means of SEM analyses; one simple model which did not include teacher burnout and one extended model in which teacher burnout was included. Both models revealed that there was no direct relation between supervisory support and job satisfaction. In the simple model (Fig. 1) the relation between supervisory support and job satisfaction was mediated through the three school context variables: time pressure, relations with parents, and autonomy. The strongest indirect relation was through autonomy, both because autonomy was the strongest predictor of job satisfaction and because it was the school context variable that was most strongly related to supervisory support. However, we should note that all school context variables, independently of each other predicted job satisfaction, supporting our previous conclusion that one should consider a variety of circumstances when attempting to improve teachers' working conditions and job satisfaction.

The extended model (Fig. 2) revealed that job satisfaction was related to two of the dimensions of teacher burnout. It was relatively strongly predicted by emotional exhaustion and moderately predicted by teachers' feeling of reduced accomplishment. Moreover, the testing of this model indicated that time pressure and relations to parents were only indirectly related to job satisfaction, through emotional exhaustion and reduced accomplishment. In comparison, autonomy was both directly and indirectly related to job satisfaction. The latter result strongly supports the conceptualization of autonomy as a basic psychological need (Deci & Ryan, 2000) and that lack of autonomy is predictive of strain (Peeters & Rutte, 2005) whereas experiencing autonomy is indicative of job satisfaction (Crosso & Costigan, 2007).

As we have already noted, neither contextual variables at school nor the three dimensions of teacher burnout can be added up to single measures of job demands, job resources, or teacher burnout. The SEM analysis reported in Fig. 2 indicates that the school context variables relate to job satisfaction in different ways and through different dimensions of teacher burnout. Time pressure is indirectly related to job satisfaction through the emotional exhaustion dimension of teacher burnout. In comparison, relation to parents is also indirectly related to job satisfaction. However, the strongest indirect relation to job satisfaction is through reduced feeling of personal accomplishment. Thirdly, autonomy is both directly and indirectly related to job satisfaction. Hence, autonomy differs from time pressure and relation to parents in that it is related to job satisfaction independently of how it relates to teacher burnout.

The relations between supervisory support and time pressure, relations to parents and autonomy may be given different explanations. One possible explanation is that those school principals who are perceived as supportive by the teachers are those who are concerned with reducing time pressure on the teachers, who are placing confidence in the teachers and providing autonomy, and who are taking responsibility in matters where parents are involved. Another possible explanation is that good relations with and emotional support from the school leadership have the psychological effect of reducing the feeling of time pressure, increasing the feeling of autonomy, and providing optimistic expectations regarding interaction with parents. However, these are merely speculations that need to be tested in future research.

The results of this study have implications for both future research and educational practice. Future research should measure school context variables separately and analyze the relative impact of these variables instead of looking at general measures of job demands and job resources. Furthermore, the three dimensions of teacher burnout are weakly correlated and relate differently to school context variables and to job satisfaction. Therefore, future research should also examine the three dimensions of teacher burnout separately. At the practical level the results imply that school politicians and school leaders should pay serious attention to teachers' working conditions. Educational researchers have noticed an acceleration of working speed among teachers and an increasing number of work assignments over the last years resulting in less time for rest and recovery (Hargreaves, 2003; Lindqvist & Nordänger, 2006). The present study strongly indicates that this development may result in increased emotional exhaustion and (therefore) in reduced job satisfaction. It is therefore of vital importance that school politicians and administrators make a serious effort to reduce time pressure in the teaching profession.

In the teaching profession autonomy is necessary for teachers to be able to address the changing needs of students and to respond to

a huge number of situations which requires immediate attention (e.g., Crosso & Costigan, 2007). Moreover, this study shows that teacher autonomy is related to all three dimensions of burnout and both directly and indirectly related to job satisfaction. However, previous research indicates an international tendency that teacher's autonomy is diminishing (Ballet et al., 2006). Therefore there is a need not only to increase teachers' autonomy, but also to clarify the extension and the limits of teachers' autonomy. Paradoxically, we believe that clarifying teachers' autonomy in itself will lead to a stronger feeling of having autonomy. We assume that the clarification of the extension and the limits of teacher autonomy will reduce anxiety and uncertainty and increase confidence in the choices made by the individual teacher, and thereby increase the feeling that one, within limits, is free to choose reactions and strategies that one find best suited in the situation. However, this is also an assumption that needs to be tested empirically in future research.

A limitation of the present study is that we have examined only a few school context variables. Although the analyses clearly demonstrate the importance of these variables, other school context variables, which we did not include in the study may also be important. Future research should extend the number of such variables. Another limitation of this study is that it is designed as a cross-sectional study. Although we have tested theoretical models in which school context variables predict job satisfaction through burnout, we should warn against rigid causal interpretations. Longitudinal studies are needed to explore causal relations.

Acknowledgement

This research was supported by a grants from Union of Education Norway and from Department of Education at the Norwegian University of Science and Technology.

References

Ballet, K., Kelchtermans, G., & Loughran, J. (2006). Beyond intensification towards a scholarship of practice: analysing changes in teachers' work lives. *Teachers and Teaching: Theory and Practice, 12*, 209–229.

BlackBranch, J. L. (1996). The consequences of teaching and job satisfaction: federation/union, remunerations, and career development, the most important factors. *Journal of Collective Negotiations in the Public Sector, 25*, 247–269.

Bollen, K. A. (1989). A new incremental fit index for general structural models. *Sociological Methods & Research, 17*, 303–316.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 445–455). Newbury Park, CA: Sage.

Byrne, B. M. (1994). Burnout: testing for the validity, replication, and invariance of the causal structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal, 31*, 645–673.

Byrne, B. M. (2001). *Structural equation modelling with AMOS. Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.

Cano-Garcia, F. J., Padilla-Munoz, E. M., & Carrasco-Ortiz, M. A. (2005). Personality and contextual variables in teacher burnout. *Personality and Individual Differences, 38*, 929–940.

Crosso, M. S., & Costigan, A. T. (2007). The narrowing of curriculum and pedagogy in the age of accountability. Urban educators speak out. *Urban Education, 42*, 512–535.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits. Human needs and the self-determination of behaviour. *Psychological Inquiry, 11*, 227–268.

Evans, L. (1997). Understanding teacher morale and job satisfaction. *Teaching and Teacher Education, 13*, 831–845.

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). *Journal of School Psychology, 43*, 495–513.

Hall, B. W., Pearson, L., & Carroll, D. (1992). Teachers' long-range teaching plans: a discriminant analysis. *Journal of Educational Research, 85*, 221–225.

Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity*. Milton Keynes: Open University Press.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modelling: A Multidisciplinary Journal, 6*, 1–55.

Jennett, H. K., Harris, S. L., & Mesibov, G. B. (2003). Commitment to philosophy, teacher efficacy, and burnout among teachers of children with autism. *Journal of Autism and Developmental Disorders, 33*, 583–593.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: implications for job redesign. *Administrative Science Quarterly, 24*, 285–307.

Karasek, R. A., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.

Kline, R. B. (1998). *Principals and practice of structural equation modelling*. New York: Guilford.

Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology, 77*, 229–243.

Koustelios, A., Karabatzaki, D., & Kouisteliou, I. (2004). Autonomy and job satisfaction for a sample of Greek teachers. *Psychological Reports, 95*, 883–886.

Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*, 123–133.

Leung, D. Y. P., & Lee, W. W. S. (2006). Predicting intention to quit among Chinese teachers: differential predictability of the component of burnout. *Anxiety, Stress, & Coping, 19*, 129–141.

Lindqvist, P., & Nordänger, U. K. (2006). Who dares to disconnect in the age of uncertainty? Teachers' recesses and "off-the-clock" work. *Teachers and Teaching: Theory and Practice, 12*, 623–637.

Malach-Pines, A. (2005). The burnout measure, short version. *International Journal of Stress Management, 12*, 78–88.

Maslach, C., & Jackson, S. E. (1981). *Maslach burnout inventory manual*. Mountain View, CA: CPP, Inc.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996).). *Maslach burnout inventory manual* (3rd ed.). Mountain View, CA: CPP, Inc.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397–422.

Norwegian Ministry of Education and Research. (2007). *Education – From kindergarten to adult education*. Oslo: Norwegian Ministry of Education and Research.

Pearson, L. C., & Moomaw, W. (2006). Continuing validation of the Teacher Autonomy Scale. *Journal of Educational Research, 100*, 44–51.

Peeters, M. A. G., & Rutte, C. G. (2005). Time management behaviour as a moderator for the job demand–control interaction. *Journal of Occupational Health Psychology, 10*, 64–75.

Pines, A. M., & Aronson, E. (1988). *Career burnout: Causes and cures*. New York: Free Press.

Schaufeli, W. B., & Bakker, A. D. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *Journal of Organizational Behavior, 25*, 293–315.

Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study & practice. A critical analysis*. London: Taylor & Francis.

Schaufeli, W. B., & Salanova, M. (2007). Efficacy or inefficacy, that's the question: burnout and work engagement, and their relationships with efficacy beliefs. *Anxiety, Stress, & Coping, 20*, 177–196.

Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology, 99*, 611–625.

Skaalvik, E. M., & Skaalvik, S. (2008). Teacher self-efficacy: Conceptual analysis and relations with teacher burnout and perceived school context. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *Self-processes, learning, and enabling human potential* (pp. 223–247). Connecticut: Information Age Publishing.

Stoeber, J., & Rennert, D. (2008). Perfectionism in school teachers: relations with stress appraisals, coping styles, and burnout. *Anxiety, Stress, & Coping, 21*, 37–53.

Utdaningsdirektoratet. (2008). *Utdanningsspeilet. Analyse av grunnskole og videregående opplæring i Norge*. Oslo: Utdaningsdirektoratet.