Burnout among teachers: theoretical setting, top-down innovation, and social relations
Evers, W.J.G.

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CHAPTER 2

Burnout and self-efficacy: A study on teachers' beliefs when implementing an innovative educational system in the Netherlands

Abstract
Background. In the Netherlands, secondary education has seen radical changes that originated with the national authorities, including the Study-home system, a pupil-centered approach in which teachers help develop pupils' independent working and creative thinking in order to get them to take responsibility for their own academic achievements. As educational innovations are more often than not accompanied by stress, the present study focuses on the onset of burnout among teachers who recently implemented this innovative system in the Netherlands.

Aims. To test hypotheses that the extent to which teachers have a negative attitude towards the new instructional practices relates positively to their level of burnout, and that their self-efficacy beliefs regarding implementation of the practices and coping with stress involved in this relate negatively to their burnout levels.

Sample. A random sample of 490 teachers employed in the Study-home system participated in this study.

Methods. Three questionnaires were used. The Dutch version of the Maslach Burnout Inventory for teachers (Schaufeli & Van Horn, 1995) was used to assess the teachers' burnout level. Second, a specially developed self-efficacy questionnaire relating to the domains of: (1) guiding groups of students using the principle of differentiation (2) involving pupils with tasks and (3) use of innovative educational practices (3 items). Last, a questionnaire on the teachers' attitudes concerning the usefulness and effectiveness of the Study-home as an educational innovation.

**Results.** Regression analyses showed that the self-efficacy beliefs for each of the three domains were significantly and negatively related to the depersonalisation and emotional exhaustion dimensions of burnout, and significantly positively related to the personal accomplishment dimension. Furthermore, the more negative the teachers’ attitudes towards the Study-home appeared to be, the more they appeared to suffer from depersonalisation and emotional exhaustion, and the lower they scored on the personal accomplishment dimension of burnout.

**Conclusions.** The study’s results indicate that teachers’ self-efficacy beliefs are related to their burnout level. Teachers with strong self-efficacy beliefs seem to be more prepared to experiment with, and later also to implement new educational practices.

**Introduction**

The tasks of teachers are demanding and heavy. It appears that annually many teachers feel unable to carry on with their jobs. Results from a considerable number of investigations into this subject showed that quite a few teachers experience feelings of exhaustion during their career (Albertson & Kagan, 1987; Burke & Greenglass, 1991; Friedman, 1996; Merseth, 1992; Van Horn & Van Dierendonck, 1998). Blase (1986) and Huston (1989) stated that in the U.S.A. teacher burnout has become a topic receiving national attention, which is underscored in a survey of American literature by Farber (1991) concluding that approximately 5% to 20% of all teachers in the United States will be burned out at a given moment in their career.

The onerous nature of the profession of a teacher is particularly shown in the oppressive quantities of stress they experience in their job. Research among British teachers showed that about a third of them experience the job of a teacher as being extremely stressful (Borg, 1990). Especially when comparing professions according to the degree of stress experienced, it appears that teaching is a very stressful job. Travers and Cooper (1993) found that teachers suffered from higher levels of stress than the average population and persons who also worked in client-related professions, such as medical doctors, nurses, and hospital attendants. Dutch figures point in the same direction. In a study on views about employment among Dutch workers, teachers indicated they were least able to cope with job-related workloads in comparison with industrial workers, civil servants, caregivers, and commercial workers (SEO, 1998; Van Veldhoven & Broersen, 1999). In the Netherlands, relatively many teachers are declared disabled or partially disabled for work, because they can not cope with
the high work-strain and the accompanying stress. In 1994, 44% of the total number of persons disabled for work consisted of teachers (ABP, 1995). In over half of the cases psychological complaints were responsible for this form of being disabled for work, which, in literature, is increasingly connected with burnout (Schaufeli & Enzmann, 1998).

Schaufeli, Maslach, and Marek (1993, p.10) state that the burnout syndrome "...is first and foremost visible in human service workers...". This conception of burnout is articulated in the widely used definition by Maslach and Jackson (1986) in which burnout is described as a psychological syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among individuals who work with other people in some capacity. Emotional exhaustion refers to feelings of being emotionally overextended and a strong depletion of one’s emotional resources. Depersonalisation refers to a negative, callous, and detached attitude towards the persons that one works with, i.e. patients, clients, or pupils. Reduced personal accomplishment is accessed through a person’s negative self-evaluation in relation to his or her job performance (Schaufeli, et al., 1993).

This study on burnout has been performed among teachers working in the second phase of secondary education, i.e. the upper years of senior general secondary schools and pre-university education. In September 1999, in the Netherlands radical innovative educational changes, commonly called the Study-home indicating that schools should become places of study, were implemented in this phase of secondary education. Study-home refers to a place where pupils of higher secondary education are to find a safe place to grow, to develop, and to acquire academic achievements in a co-operative and communicative setting; in short the innovative school and school system in the Netherlands.

The innovations resulted from national political discussions on adapting education to the demands of rapid social-cultural changes, such as the questionability of the importance of ready-made knowledge, computer-based technology, and pupils’ lack of interest in traditional teacher-centred education. After a law on educational innovations had been constituted, the new system was implemented nation-wide. It is a matter of a fundamental and basic change, a transformation of culture (Stuurgroep Profiel Tweede Fase Voortgezet Onderwijs, 1996).

An important point of departure of the Study-home is that teachers are to activate and promote the pupils’ independent thinking and how to learn to study, while at the same time they have to make allowances for the individual student’s capacities. While formerly teachers were mainly charged with conveying knowledge and skills to pupils (sometimes rather condescendingly called “chalk-and-talk” instruction), they are now expected to be responsible
for conducting educational processes (Stokking, 1998). Levine, Donitsa-Schmidt, and Zellermayer, (1996) viewed the primary role of the teacher in innovative classroom settings as a mediator between subject matter and pupils, someone who encourages pupils to be responsible for their own development via collaboration, communication, and reflection.

Teachers who are mainly concerned about controlling the educational process of a large group of pupils fear an impairment of the control they exercise over their pupils, which causes them to be reticent about differentiating their instructional methods (Smylie, 1999). When being in control of the learning process, teachers are more likely to perceive their own professional worth and self-efficacy (Kushman, 1992). Critics of the innovations argue that the teachers lack experience in using innovative educational methods and have not been sufficiently prepared for their new tasks, which is an essential requirement (Mohlman, Coladarci, & Gage, 1982; Stein & Wang, 1988). Moreover, teachers often seem to lack the time to train the new skills or to consult one another in order to acquire the innovative methods the pedagogic-didactical changes require (Veugelers, 1999). These points of criticism may induce teachers to doubt their abilities to adequately function in the new Study-home. They may become devoid of feelings of success in their work, which lead to judgements of inefficacy on their classroom achievements, which in turn may result in feelings of burnout.

In this study Bandura’s (1977) self-efficacy theory is used to explain why teachers who doubt their capabilities to adequately function in the new Study-home may report higher levels of burnout than teachers who judge their abilities in this domain as quite sufficient. Bandura (1997) describes perceived self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). Self-efficacy beliefs do not refer to someone’s capabilities or skills but only to what someone believes he or she is capable of under certain circumstances, regardless of the capabilities or skills that he or she actually possesses.

The determinants of self-efficacy beliefs consist of four sources of information, listed below in descending order (Bandura, 1986, 1997; Maddux, 1995): (1) enactive mastery experiences, (2) vicarious experiences, (3) verbal persuasion, and (4) physiological and affective states. Efficacy beliefs produce their effects through four mediating processes, i.e. cognitive, motivational, affective, and selective processes (Bandura, 1997). These processes influence the teachers' functioning. For instance, in teachers full of self-doubts these mediating processes will negatively influence thought patterns, regulations of motivation, self-regulation of affective states, and the selection of activities and environments. In short,
these teachers perceive themselves to be occupationally ineffectual, and this is a central mediator of burnout (Bandura, 1997, p.466). So, the chances are that inadequate preparation for educational innovations is related to lower levels of self-efficacy, which may mediate in the onset of burnout in teachers of the Study-home.

Since self-efficacy beliefs are always linked to a certain domain of activity, it is quite striking that in studies involving teachers, self-efficacy is always put forward as a general concept, "teacher efficacy." Teacher efficacy was initially the target of a study by researchers at the RAND organization. They defined perceived teacher efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 137), adding two items to what was already a long questionnaire in an attempt to measure this concept.

In subsequent research, teacher efficacy beliefs have been related to a multitude of critically important educational variables, such as student achievement and motivation (Moore & Esselman, 1992), student self-esteem and pro-social attitudes (Borton, 1991; Cheung & Cheng, 1997), school effectiveness (Hoy & Woolfolk, 1993), teachers' adoption of innovations (Fuchs, Fuchs, & Bishop, 1992), the success of program implementation (Guskey, 1988), teachers' referral decisions for special education (Meijer & Foster, 1988; Soodak & Podell, 1993), teachers' professional commitment (Coladarci, 1992), teachers' classroom management strategies (Woolfolk, Rosoff, & Hoy, 1990), teacher absenteeism (Imants & Van Zoelen, 1995), and teacher stress (Bliss & Finneran, 1991; Parkay, Greenwood, Olejnik, & Proller, 1988).

In the present study, teachers' self-efficacy beliefs are determined for three domains of activities or competencies required for successful adoption and implementation of the innovative practices. The first domain of self-efficacy beliefs of teachers being employed in the Study-home is working with tasks. The tasks serve for making pupils independently mould their own educational process. Whereas the traditional practices are mainly teacher-centred, i.e. teachers talk and pupils listen passively (Cuban, 1990; Goodlad, 1984; Tomic, 1987) teaching in the Study-home is mainly directed at the pupils' independent acquisition of the subject-matter guided by tasks (Ras, 1999).

Co-operation among pupils and between teacher and pupils is a striking feature of these Dutch educational innovations. The teachers are supposed to frequently interchange between individual-centred and group-centred practices. Accordingly, the second domain of self-efficacy beliefs in this study is about guiding groups of pupils in a differentiating way. It could be said that teachers increasingly have become "group-managers" whose activities are
characterised by associating well and efficiently with groups of pupils (Meijnen, 1999). However, they must at the same time promote the individual pupil's academic achievement (Stuurgroep Profiel Tweede Fase Voortgezet Onderwijs, 1996).

Besides the competencies necessary to function well as a teacher of the Study-home as described above, teachers need specific outlooks to be able to turn to and adopt the new innovative practices. Weak self-efficacy beliefs about being a competent educator may be associated with an increased level of stress caused by changes in the work situation and the pressures of school reform (Corbett, Firestone, & Rossman, 1987; DeMesquita & Drake, 1994; Duffy & Roehler, 1986; Smylie, 1999). That is why the third domain of self-efficacy beliefs in this study is about coping with stress attending the implementation of innovative educational practices such as the Study-home. This self-efficacy domain is called the use of educational innovative practices.

In this study we examined teachers' self-efficacy beliefs in relation to (1) involving pupils with tasks in learning processes, (2) differentially guiding groups and (3) coping with the stresses involved in implementing such innovative educational practices. In the Study-home teachers are expected to acquire new skills, such as promoting independence of pupils and co-operation of pupils in group activities, skills teachers have not or not sufficiently been instructed or trained in (Kwakman, 1999; Veugelers, 1999; Veugelers & Zijlstra, 1998). Instruction and in-service training of new skills was mostly not available, or in some cases only in a limited sense for the teachers because of a shortage of time; only after the implementation of the Study-home were meetings arranged for the teachers (Knoppert & Cornelisse, 2000). A strong sense of self-efficacy is found to be an important factor in school improvement (Dembo & Gibson, 1985). Bandura (1997) argues that people with strong self-efficacy beliefs do not shun new challenges, and they will probably be quite determined to complete actions successfully. People having weak self-efficacy beliefs in performing certain tasks appear to sooner experience tension, stress, and aversion than those with strong self-efficacy beliefs do. Self-efficacy seems to be a critical variable in persuading teachers to adopt research-based teaching strategies (Wong, 1997).

The situation and resulting consequences as described above may lead to the conclusion that the teachers working in the Study-home are going to experience tension and stress, too (Leithwood, Menzies, Jantzi, & Leithwood, 1996; Mohlman, Coladarci, & Gage, 1982). Moreover, as they have only few opportunities to evade innovative practices in their routine educational duties it may be assumed that especially teachers having weak self-efficacy beliefs about the demands made upon them by the innovative educational practices
will experience tension and stress. As burnout can be viewed as a response to prolonged tension and stress, the following hypothesis is formulated: the degree to which teachers judge themselves capable in the above three domains is related to their burnout level, i.e. their emotional exhaustion, depersonalisation, and reduced personal accomplishment. It is expected that weaker self-efficacy beliefs will be related to higher scores on emotional exhaustion and depersonalisation, and to lower scores on personal accomplishment.

As there is a relation between teachers' self-efficacy level and their attitudes towards innovations (Guskey, 1988), we not only examined the relation between self-efficacy and burnout, but also the relationship between teachers' attitudes towards the effectiveness and usefulness of the Study-home and their level of burnout. Research from as early as 1957 (Festinger) shows that a discrepancy between a person's behaviour and attitude is attended by stress. Attitudes are formed on experiences of the past and stability is a most characteristic feature of them, meaning they are not easily changed (Nuttin & Beckers, 1976). Even when new practices are associated with improved outcomes, routines are difficult to change (Eisner, 1992; Gersten, Vaughn, Deshler, & Schiller, 1997). Many of the respondents have worked in the educational profession for a long time, already having experienced educational changes, whereas the traditional teacher-centred practices, i.e. knowledge is "presented" to the learner (Cuban, 1990), have been the adopted educational concept for decades (Cuban, 1984). This also goes for the younger generation of teachers. They themselves were educated in the traditional system, which served as their educational model for a long time (Goodlad, 1984; Tomic, 1987). So, it is a matter of course that teachers have come to some strong convictions with respect to teaching marked by teacher-centred practices (Miller, 1999). Teachers working in the second phase of secondary education and judging the educational innovations of the Study-home to be ineffective in comparison with the traditional educational system are likely to experience tension and stress. They are obliged to educate pupils according to innovative practices, whose effectiveness and value they doubt. Teachers' attitudes towards the innovations may have become even more negative because of lack of collaborative planning, i.e. the innovations were planned and ordered by the national educational authorities. The innovations can be looked upon as top-down planning strategies, which often evoke resistance or indifference (McLaughlin & Marsh, 1978). As burnout can be viewed as a response to prolonged tension and stress, the following hypothesis will be examined: Negativity of teachers' attitudes towards the Study-home innovation will be related to higher scores on emotional exhaustion and depersonalisation and to lower scores on personal accomplishment.
Method

Participants

The participants were 490 teachers who were employed in the upper grades of schools of higher general secondary education (i.e. Dutch HAVO which prepares students for higher vocational training, and VWO which was primarily intended as preparatory education for universities), working in 33 randomly selected schools in the Netherlands. In all, 114 female teachers (23.3%) and 376 male teachers (76.7%) participated. The average age of the teachers was 47.23 years (SD = 8.07), ranging from 23 to 64 years old. The mean number of years of teaching experience was 22.14 (SD = 8.86), ranging from 1 to 39. The mean number of weekly working hours was 20.65 (SD = 8.24), of which a mean of 13.59 (SD = 7.39) lessons were given in the upper grades of the HAVO and VWO, the so-called “second phase” of the new Dutch secondary educational system, commonly called Study-home.

Measures

Burnout. The Dutch version of the Maslach Burnout Inventory for teachers (MBI-NL-Ed; Schaufeli & Van Horn, 1995) was used to assess teachers’ burnout level. The instrument consists of twenty items and is divided into three sub-scales: (1) emotional exhaustion (EE; 8 items), (2) depersonalisation (D; 5 items) and (3) personal accomplishment (PA; 7 items). Teachers were asked to respond on a 7-point scale, from “never” to “always”, to these items, which are shown in full in Appendix 1. The three-factor structure of the Dutch version of the Maslach Burnout Inventory for teachers has been investigated with confirmatory factor analysis (Schaufeli, Daamen, & Van Mierlo, 1994).

Perceived Self-efficacy. Self-efficacy beliefs were measured with an instrument especially developed for this study. Items were formulated for three domains of self-efficacy beliefs that are closely related to the most important activities of teachers working in second phase of secondary school in the Netherlands: (1) to guide groups of students using the principle of differentiation (6 items), (2) to involve pupils in tasks (4 items), and (3) the use of innovative educational practices (3 items). In order to form a good notion of the most important activities of teachers working in the Study-home, not only was literature consulted, but information was also gleaned from interviews with five teachers of different subjects working in schools that had already been doing pilot work with the new system one year before its nation-wide implementation. Recommendations stated in the literature for the development of instruments measuring self-efficacy beliefs were acted on as far as possible when formulating the items.
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(Forsyth & Carey, 1998; Maibach & Murphy, 1995), which were scored on a 6-point scale running from "totally disagree" to "completely agree". The items are reported in Table 1.

**Attitude.** The attitude of teachers concerning the usefulness and effectiveness of the Study-home as an educational innovation was measured with a 5-item instrument developed for this study and based on interviews with the five Study-home pilot teachers mentioned above. The items were worded to reflect the most salient characteristics of the innovative practices, each item representing a bipolar statement to be evaluated by giving ten points in total to the two alternatives. The items are shown below in Table 1.

**Procedure**

The questionnaires were mailed to 33 randomly selected schools. Before this, school principals had been telephoned asking for their co-operation at school level. These preliminary requests were also meant to explain the purpose of the investigation and the way it had been organised. After the principals’ approval of the request, the questionnaires, the accompanying letters, and the envelopes for returning the questionnaires were mailed to the principals with the request to hand them to teachers working in the upper grades of HAVO and/or VWO (schools in the Dutch higher general secondary school system preparing students for advanced polytechnic education or universities). In the letter of introduction the purpose of the investigation was explained and the teachers were kindly asked to participate in the investigation by filling out the self-report questionnaires and sending them back anonymously and individually in postage pre-paid envelopes. Three weeks after the first mailing, repeat letters were sent to the principals requesting them to hand these letters to the teachers.

**Results**

In order to be able to determine whether the four variables showing a degree of predictability of burnout, i.e. the attitude towards the Study-home and the three domains denoting the self-efficacy beliefs, reflect four factors, a confirmatory factor analysis has been conducted with the AMOS 6.1 computer program. A four-factor oblique model has been formulated in which the items used to measure the attitude towards the educational innovations were allowed to load on one factor, and the items used to measure the self-efficacy beliefs of each of the three domains on the other three factors; the four factors were allowed to correlate with each other. In order to decide whether the four-factor model fitted the data, the Comparative Fit Index (CFI) was used, for which the research findings show that it is relatively independent of the sample size taken at random (Bentler, 1990). It was found
that the value of CFI was higher than the criterion of .90 recommended by Bentler and Bonett (1980), and so it was assumed that the model could not be significantly improved.

Table 1. Results of confirmatory factor analysis of items for self-efficacy beliefs and the attitude towards the "Study-home".

<table>
<thead>
<tr>
<th>Item nr.</th>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
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<tr>
<td></td>
<td><strong>Self-efficacy beliefs about guiding groups</strong></td>
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<td></td>
<td>in a differentiating way</td>
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<tr>
<td>3.</td>
<td>If a pupil shows unmotivated behaviour, I am able to find out the reason for it.</td>
<td>.66</td>
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<td>5.</td>
<td>I always assess well what is going on when a group works in a troublesome way</td>
<td>.66</td>
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<td>7.</td>
<td>I am able to foster co-operation in a group when the pupils experience difficulties in this.</td>
<td>.65</td>
<td>--</td>
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<tr>
<td>10.</td>
<td>When a group is disruptive I am able to get them back to work again quickly.</td>
<td>.65</td>
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<td>4.</td>
<td>I can quickly set a pupil to work who is thwarting co-operation with others.</td>
<td>.62</td>
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<td>2.</td>
<td>I am able to point out to the pupils that they are responsible for good academic achievements.</td>
<td>.57</td>
<td>--</td>
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<td></td>
<td><strong>Self-efficacy beliefs about involving pupils in tasks</strong></td>
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<td></td>
<td>in a differentiating way</td>
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<tr>
<td>11.</td>
<td>If pupils experience difficulties in carrying out a task. I can make them think about finding solutions themselves.</td>
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<td>.75</td>
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<td>13.</td>
<td>I am able to give the necessary clues to pupils they need in searching for relevant information for a task.</td>
<td>--</td>
<td>.63</td>
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<tr>
<td>6.</td>
<td>If a pupil experiences difficulties in doing a task, I am able to help him or her on the right course.</td>
<td>--</td>
<td>.57</td>
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<td>9.</td>
<td>I can find out and check whether a task has the appropriate level of difficulty.</td>
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<td>.45</td>
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<td></td>
<td><strong>Self-Efficacy Beliefs towards the Use of Innovative Educational Practices</strong></td>
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<td></td>
<td>In general I can cope quite well with stress that attends the implementation of educational innovations, as for example the Study-home.</td>
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<td>--</td>
<td>.92</td>
<td>--</td>
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<tr>
<td>12.</td>
<td>I can cope well with stress originating from innovative educational changes such as the Study-home.</td>
<td>--</td>
<td>--</td>
<td>.90</td>
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</table>

58
1. Even when sceptical colleagues comment on it, I am able to keep on putting my back into innovative projects.

Attitude towards the Study-home

1. In my opinion the most suitable educational strategy is the method of self-discovery as used in the Study-home
2. My favourite style of teaching is the teacher-centred style
3. I believe that the educational innovations of the second phase prepare pupils much better for higher education
4. I think that pupils of the second phase can cope with the freedom they get in the new educational system
5. It is my opinion that the control of the educational process should mainly be guided by the teacher

Results of the confirmatory factor analysis show that the four-factor model fitted the data quite well (null model: $\chi^2(153) = 3220.13$; four-factor model: $\chi^2(129) = 432.23$, CFI = .90). This four-factor model fitted the data significantly better than the one-factor model ($\chi^2(135) = 1408.63$; $\Delta \chi^2(6) = 976.40$, $p < .001$), the best-fitting two-factor model ($\chi^2(134) = 971.79$, CFI = .73; $\Delta \chi^2(5) = 539.56$, $p < .001$) and the best-fitting three-factor model ($\chi^2(132) = 491.96$, CFI = .88; $\Delta \chi^2(3) = 59.73$, $p < .001$). The fit of the four-factor model could not be improved by adding a second-order factor behind the three self-efficacy factors to the model ($\chi^2(131) = 452.83$, CFI = .90; $\Delta \chi^2(2) = 20.60$, $p < .001$).

Table 1 shows the standardised regression coefficients of the four-factor model that can be interpreted as factor loadings. The lowest value of the standardised regression coefficients was -.41, which implies that the items loaded well on the factors in question.

After scaling, the means, standard deviations, and intercorrelations were computed (see Table 2). Reliability analysis resulted in Cronbach alphas of .90 for emotional exhaustion,.68 for depersonalisation, .83 for personal accomplishment, .79 for attitude, .68 for the self-efficacy beliefs concerning the employment of pupils with tasks, .85 for the self-efficacy beliefs concerning the use of innovative educational practices, and .80 for the self-efficacy beliefs concerning guiding groups of students.

The correlation analyses (see Table 2) showed that the self-efficacy beliefs for each of the three domains were significantly and positively related to the depersonalisation and...
emotional exhaustion dimensions of burnout, and significantly but negatively related to personal accomplishment. The more negative the teachers' attitude towards the Study-home appeared to be, the more they appeared to suffer from depersonalisation and emotional exhaustion, and the lower they scored on personal accomplishment. Older and more experienced teachers had a more negative attitude towards the Study-home and they had weaker self-efficacy beliefs in both using innovative educational practices and in guiding groups of students in a differentiating way. Moreover, teachers who were older scored higher on emotional exhaustion and depersonalisation, but lower on personal accomplishment than did their younger counterparts. The total number of working hours seemed only to be significantly related to emotional exhaustion and to the self-efficacy belief concerning the use of innovative educational practices; the more lessons teachers weekly give, the more they

Table 2. Means and standard deviations of the variables and correlations between the variables.

<table>
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<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
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<th>11</th>
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<tr>
<td>1</td>
<td>Gender</td>
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<tr>
<td>2</td>
<td>Age</td>
<td>47.23</td>
<td>8.07</td>
<td>-0.33**</td>
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<td>3</td>
<td>Number of Years Working as a Teacher</td>
<td>22.14</td>
<td>8.96</td>
<td>-0.37**</td>
<td>0.87**</td>
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<tr>
<td>4</td>
<td>Number of Lessons Per Week</td>
<td>20.65</td>
<td>8.26</td>
<td>-0.19**</td>
<td>-0.03</td>
<td>0.00</td>
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<tr>
<td>5</td>
<td>% Teacher-Controlled Practices</td>
<td>35.76</td>
<td>20.74</td>
<td>-0.07</td>
<td>0.11*</td>
<td>0.09</td>
<td>-0.07</td>
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<tr>
<td>6</td>
<td>Attitude towards the Study-home</td>
<td>23.99</td>
<td>7.14</td>
<td>0.04</td>
<td>-0.15**</td>
<td>-0.17**</td>
<td>-0.02</td>
<td>-0.39**</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>SE Towards Guiding Groups</td>
<td>19.25</td>
<td>4.19</td>
<td>0.00</td>
<td>-0.11*</td>
<td>-0.12**</td>
<td>0.02</td>
<td>-0.21**</td>
<td>0.35**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>SE Towards Using Tasks</td>
<td>14.72</td>
<td>2.44</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.04</td>
<td>-0.02</td>
<td>-0.20**</td>
<td>0.23**</td>
<td>0.57**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>SE Towards Using Innovations</td>
<td>9.67</td>
<td>3.24</td>
<td>0.03</td>
<td>-0.12**</td>
<td>-0.16**</td>
<td>-0.14**</td>
<td>-0.15**</td>
<td>0.48**</td>
<td>0.43**</td>
<td>0.41**</td>
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<td></td>
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<tr>
<td>10</td>
<td>Emotional Exhaustion</td>
<td>18.41</td>
<td>9.38</td>
<td>-0.04</td>
<td>0.13**</td>
<td>0.16**</td>
<td>0.13**</td>
<td>0.00</td>
<td>-0.28**</td>
<td>-0.20**</td>
<td>-0.42**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Depersonalisation</td>
<td>6.44</td>
<td>4.12</td>
<td>-0.08</td>
<td>0.12**</td>
<td>0.13**</td>
<td>0.07</td>
<td>0.07</td>
<td>-0.30**</td>
<td>-0.36**</td>
<td>-0.26**</td>
<td>-0.45**</td>
<td>0.56**</td>
</tr>
<tr>
<td>12</td>
<td>Personal Accomplishment</td>
<td>25.98</td>
<td>6.11</td>
<td>-0.03</td>
<td>-0.18**</td>
<td>-0.18**</td>
<td>-0.01</td>
<td>-0.12**</td>
<td>0.33**</td>
<td>0.57**</td>
<td>0.44**</td>
<td>0.53**</td>
<td>-0.42**</td>
</tr>
</tbody>
</table>

Note: SE: Self-Efficacy Belief; *p < .05; **p < .01.

suffer from emotional exhaustion, and the less they are convinced of their capacities to stand up to the stress innovative changes are accompanied with. Teachers with a more negative attitude towards the Study-home use a larger percentage of their lessons using traditional
teacher-centred practices, and have weaker self-efficacy beliefs for each of the three domains. The weaker the teachers’ self-efficacy beliefs appear to be, the higher the percentage is of their use of traditional teacher-centred practices.

Hierarchical regression analyses were carried out in order to investigate to what extent the teachers’ attitude about the usefulness and effectiveness of the Study-home and their self-efficacy beliefs towards (1) the use of tasks, (2) the guiding of groups in a differentiating way, and (3) the use of innovative educational practices, would explain their burnout level. In doing so, the variables gender, age, the number of years of teaching experience, the number of hours appointed at the school, and the percentage of lesson time the teachers estimated to have spent on traditional teacher-centred practices were statistically controlled. With each burnout dimension as a dependent variable, these control variables were first added to the regression equation (step 1), followed by the independent variables, i.e. attitude and the self-efficacy beliefs of the three distinct domains (step 2).

Table 3. Results of hierarchical regression analysis for the predicting variables of emotional exhaustion, depersonalisation and personal accomplishment.

<table>
<thead>
<tr>
<th>Predicting Variable</th>
<th>Emotional Exhaustion</th>
<th>Depersonalisation</th>
<th>Personal Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>( \Delta R^2 )</td>
<td>Beta</td>
</tr>
<tr>
<td>Step 1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.02</td>
<td>.04**</td>
<td>.03*</td>
</tr>
<tr>
<td>Age</td>
<td>.01</td>
<td>.01</td>
<td>.10</td>
</tr>
<tr>
<td>Years Experience as a Teacher</td>
<td>.04</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Number of Lessons Per Week</td>
<td>.05</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td>% Teacher-Centred Practices</td>
<td>-.10*</td>
<td></td>
<td>-.04</td>
</tr>
<tr>
<td>Step 2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Towards the Study-home</td>
<td>-.06</td>
<td>.35***</td>
<td>-.07</td>
</tr>
<tr>
<td>SE Towards Guiding Groups</td>
<td>-.03</td>
<td></td>
<td>-.35**</td>
</tr>
<tr>
<td>SE Towards Using Tasks</td>
<td>.08</td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>SE Towards Using Innovations</td>
<td>-.60***</td>
<td></td>
<td>-.34***</td>
</tr>
<tr>
<td>( F ) Total for the Equation</td>
<td>29.82***</td>
<td>15.34***</td>
<td>34.70***</td>
</tr>
</tbody>
</table>

Note: SE: Self-Efficacy Belief; * p < .05; ** p < .01; *** p < .001.

The results of the hierarchical regression analyses (see Table 3) showed that of the variables added in step 2 only the self-efficacy belief concerning the use of innovative educational practices was significantly related to the burnout dimension emotional exhaustion (\( \beta = -.60, p < .001 \)). The variance in the depersonalisation dimension of burnout was partly
explained by the self-efficacy beliefs about guiding groups ($\beta = -.16$, $p < .01$) and the use of innovative educational practices ($\beta = -.34$, $p < .001$). The self-efficacy beliefs about all three domains appeared to be significantly related to the burnout dimension personal accomplishment ($\beta = .33$, $p < .001$ for the use of innovative educational practices; $\beta = .13$, $p < .01$ for employing pupils with tasks, and $\beta = .32$, $p < .001$ for guiding groups). The total of the variance explained of the predicting variables in steps 1 and 2 was for emotional exhaustion 39%, for depersonalisation 24% and for personal accomplishment 43%.

**Discussion**

The results of this study, showing a degree of predictability of burnout level self-report by teachers' efficacy beliefs, concur with the results of other studies. Brissie, Hoover-Dempsey, and Bassler, (1988), for instance, found that teachers who positively rated their teaching capabilities suffered less from burnout than teachers whose scores were lower. Chwalisz, Altmaier, and Russell (1992) asked teachers to appraise their own capacities in dealing with the most stressful experience of the past year. The results indicate that high-scoring teachers used more effective strategies and subsequently appeared to be less burnout than low-scoring teachers. In a cross-sectional study among teachers in the Netherlands Brouwers and Tomic (1999) demonstrated that teachers' self-efficacy beliefs about classroom management were significantly related to their burnout level. However, longitudinal research showed that the teachers' self-efficacy beliefs had only an effect on the depersonalisation and personal accomplishment dimensions of burnout, and not on emotional exhaustion (Brouwers & Tomic, 2000).

As opposed to the expectations, the degree to which teachers appeared to harbour negative attitudes towards the effectiveness and usefulness of the new educational system was not significantly related to their reported burnout level. Apparently, the discrepancy between behaviour and attitudes is not so serious as to evoke long lasting tension and stress. A plausible explanation may be found in the degree of non-implementation of the innovative practices by the teachers with a negative attitude toward the Study-home. Non-implementation may occur, for a teacher's job is still characterised by isolation and relatively large autonomy (Ashton, 1984; Doyle & Ponder, 1977-78; Poole & Okeafor, 1989). In this kind of professional culture norms, values, and beliefs will rarely be challenged (Leithwood & Jantzi, 1990). The results of our correlation analysis seem to support these findings. The stronger the teachers' negative attitudes are towards the Study-home, the larger the percentage
of time the teachers spend on traditional educational practices \( (r = .39, p < .001) \). Apparently, teachers with negative attitudes towards the effectiveness of the Study-home do not spend the required time on the implementation of innovative educational practices, thus preventing the development of a discrepancy between behaviour and attitudes and consequently the susceptibility to burnout.

Allinder (1994) showed that teachers with strong self-efficacy beliefs are more prepared to experiment with and later also to implement new educational practices. These teachers were not only better planners and organisers in matters concerning their work, but they appeared to be more enthusiastic as well. Our study also suggests that teachers with strong self-efficacy beliefs show a greater readiness to adopt innovative educational practices and are less susceptible to burnout than their counterparts with weak self-efficacy beliefs.

This study has a few limitations. First, the cross-sectional character of the present study—the variables have only been measured at one time—imposes restrictions on the generalisation of the results, which may be counteracted by a longitudinal follow up. Second, self-report questionnaires are susceptible to answers tinged with social desirability. Results of this study should therefore be interpreted with caution. A longitudinal sequel to this study may overcome the drawbacks of our cross-sectional study.

Sequel investigation is also advisable because of the time-period the respondents were asked to participate, viz. a short time after the innovations had been implemented. As the complete innovative process, consisting of the phases, adoption, implementation, and institutionalisation takes about two years (Heller & Firestone, 1995), it may be expected that the implementation of the innovative practices requires a rather lengthy period of time, especially because they will be attended by a change in culture and pedagogic-didactical climate in the schools (Stuurgroep Profiel Tweede Fase Voortgezet Onderwijs, 1996).

In order to get a clear understanding of the future phases of the implementation of the Study-home it would be desirable to continue the inquiry into factors leading to the onset of burnout. Support for a longitudinal sequel study comes from Ross (1994b) who found that teachers’ self-efficacy beliefs about implementing innovative practices may be low initially, but grow stronger later on when the practices appear to be successful. On the other hand, Stein and Wang (1988) found that teachers initially having negative attitudes towards innovative practices later developed even more negative attitudes towards the innovative practices during the implementation of innovations. Teachers reporting rather negative attitudes towards the educational innovations may not experience successes in the Study-
The professional development of teachers especially takes place during their daily routines in the classrooms, which has hardly been a subject of interest within the schools (Kwakman, 1999). It seems to be appropriate to start the fight against burnout at the roots of its origin: the daily classroom practices. Collaboration is the essential foundation for school reform efforts (Curtis & Stollar, 1996), so group-centred in-service training or peer coaching directed at strengthening teachers' self-efficacy beliefs may prove to be an effective means of burnout prevention (Ross, 1995; Stein & Wang, 1988). But as teachers state to experience work overload (Smylie, 1999), it is important the intervening strategies should not burden the teachers even more. A final critical issue is the unsolved mystery of the difference between the philosophy behind the innovations, viz. viewing pupils as able, independent seekers of knowledge, and the governmental top-down strategy, imposing innovations on the teachers, regarding them as recipients of knowledge! Should not the teachers be the (co)producers of innovative practices (Englert & Tarrant, 1995)?
REFERENCES


Chapter 2


Ras, A. (1999). De rol van de docent in het studiehuis: Het coachend begeleiden van leerlingen. [The role of the teacher in the Study-home: Coaching and guiding pupils], *Handboek studiehuis tweede fase, 9* (7) (pp. 7.5, 1-7).


Appendix 1
Maslach Burnout Inventory

Emotional Exhaustion
- I feel emotionally drained by my work
- I feel used up at the end of the workday
- I feel fatigued when I get up in the morning and have to face another day on the job
- Working with people all day is really a strain for me
- I feel burned out by my work
- I feel frustrated by my job
- I feel I’m working too hard on my job
- I feel like I’m at the end of my tether

Personal Accomplishment
- I can easily understand how my students feel about things
- I deal very effectively with the problems of my students
- I feel I’m positively influencing other people’s lives through my work
- I can easily create a relaxed atmosphere with my students
- I feel exhilarated after working closely with my students
- I have accomplished many worthwhile things in this job
- In my work, I deal with emotional problems very calmly

Depersonalization
- I feel I treat some students as if they were impersonal ‘objects’
- I’ve become more callous toward people since I took this job
- I worry that this job is hardening me emotionally
- I don’t really care what happens to some students
- I feel students blame me for some of their problems