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**Aspects of the learning environment and managerial learning, How Task Characteristics and Social Support relate to Managerial Learning: Empirical Evidence from the Dutch Home Care Sector**

Refereed paper

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**Abstract**

Previous research has revealed that managers profit most from informal and on-the-job learning. Moreover, it has been shown that task characteristics and social support affect informal learning. Based on these insights, the present study examines the effects of task characteristics (psychological job demands and job control) and social support from the supervisor and colleagues on informal on-the-job learning among 1,588 managers in the Dutch home care sector. Regression analysis revealed that high demands, high control, and high colleague and supervisor support were each associated with high levels of informal learning. We found no evidence for statistical interactions among the effects of these concepts. It is concluded that in order to promote informal workplace learning among managers, especially job control should be increased.

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Organizations operate in a complex and dynamic environment nowadays. Survival and remaining competitive is becoming an ever greater challenge for organizations, meaning that it is increasingly important for them to develop the knowledge, skills and competences of their personnel (Clarke & Butcher, 2006; Prieto & Revilla, 2006). The professional development of managers deserves due attention, as the increased responsibilities borne by this group mean that their performance is becoming an ever more important determinant of organizational success. Therefore, it is vitally important for organizations to find out what factors influence managers' learning behavior, as organizations must create the optimum conditions for managers to learn. The present study examines learning by managers in the workplace and the effects of selected aspects of the working environment on their learning. Little research has been done into managerial learning which incorporates both the individual level and the job context, even though individual learning appears to be dependent on the context of learning (Antonacopoulou, 2006).

These points also hold for managers employed in the home care sector in the Netherlands (the sector in which the present study was conducted). As in other branches, the role of managers in this sector has become more onerous due to spending cuts in the sector and higher quality standards, meaning that there is less time and money available for them to participate in training or education outside the workplace. Learning at the workplace seems therefore a better solution, especially as this also seems more effective than attending formal education or courses (McCauley et al., 1994). Consequently, interest in the workplace as a learning environment has increased both in academic circles and in practice.

## **Theoretical background**

### ***Informal learning on the job***

The present study was designed to identify various aspects of the organizational learning context and their effects on the informal learning of managers. According to Karasek and Theorell (1990), learning at work can be defined as the motivation to develop new patterns of behavior and competences. According to Marsick and Volpe (1999), 'Informal learning occurs as the result of individuals making sense of experiences they encounter during their daily work lives'. The informal character of this form of learning implies a greater role for the individual learner in managing his or her own learning process. However, informal learning is also characterized by a high degree of dependence on the work environment, such as task characteristics and social support (Karasek & Theorell, 1990; Taris & Kompier, 2005).

### ***Influences from the work environment***

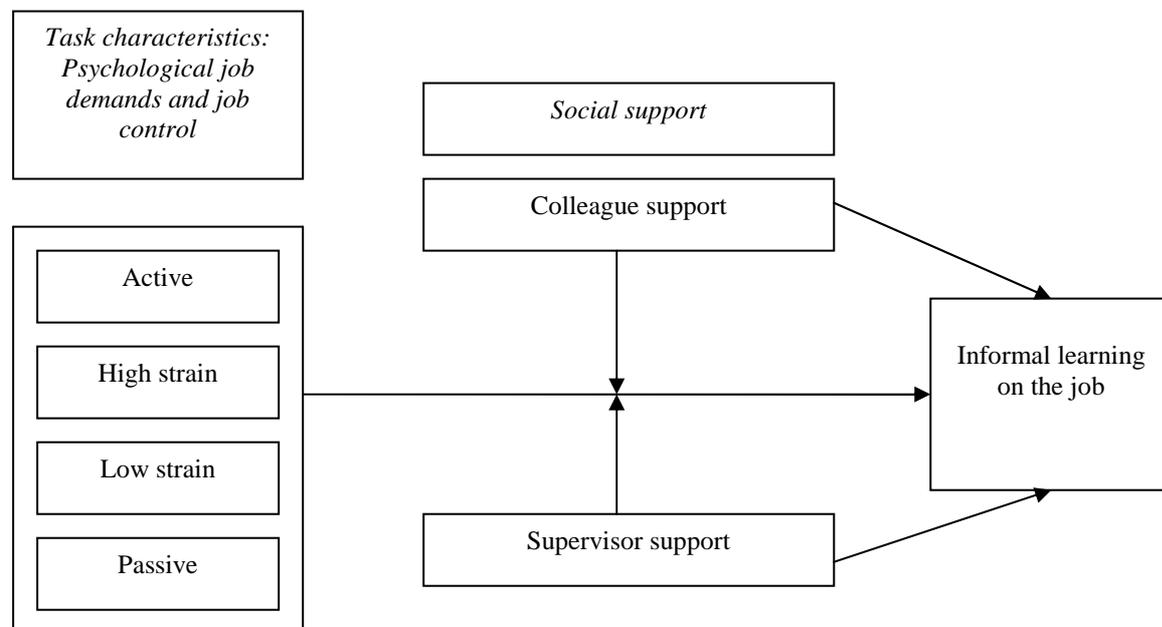
Informal learning at the workplace is influenced by various aspects of the work environment (Tannenbaum, 1997). Poell, Van Dam and Van den Berg (2004) conducted a literature study which led them to distinguish various components of work that together make up the 'learning potential' of the workplace: the number of psychological job demands (McCauley et al., 1994; Tracey, Tannenbaum & Kavanagh, 1995), and the opportunities for job control (Karasek, 1979) and social interactions (Marsick & Watkins, 1990; Tracey et al., 1995). McCauley et al. (1994) argued that learning at the workplace mainly occurs when managers are confronted with a challenging work environment, because experiencing challenge at work motivates managers to experiment with new learning strategies, new behavior and new ways of thinking (cf. Taris & Kompier, 2005). Challenge also motivates managers to achieve new levels of competence. Conversely, a study by Morrison and Brantner (1992) found that it was the *lack* – rather than the *presence* – of challenge that was

associated with informal learning at the workplace. This forces us to consider the nature of the relationship between informal learning on the job and workplace characteristics. It is a complex relationship because having many opportunities for control is seen as conducive to informal workplace learning (Karasek & Theorell, 1990), but excessive opportunities for control can, on the other hand, lead to negative outcomes such as stress and insecurity (Warr, 2007). Therefore, it is important to look at a number of workplace characteristics and their joint effect on learning (Morrison & Brantner, 1992). Based on the assumption that task characteristics and social support are significant factors in informal learning on the job, four workplace characteristics were included in this study: psychological job demands, opportunities for job control, support from supervisors and support from colleagues. These characteristics were studied in relation to informal learning at the workplace among home care managers. Figure 1 shows the variables used in the study and the expected relationships between them. Various models were used to study the associations between these factors; these are discussed next.

### ***Job Demand-Control model***

The key assumption of Karasek's (1979) Demand-Control (DC) model is that the work environment can be characterized as a combination of psychological job demands and the degree to which employees can decide for themselves what to do, how to do their work, and when they will do particular tasks (job control). To date, the model has mainly been used to investigate stress and health at work (Taris & Kompier, 2005), but the model also applies to learning at work. The active learning hypothesis of the DC model states that a combination of high psychological job demands and many opportunities for control will have positive consequences for informal workplace learning; learning behavior will be absent in the absence of psychological job demands and control opportunities (Karasek & Theorell, 1990).

Figure 1 Conceptual model



The psychological job demands and job control dimensions of the Job Demand-Control model allow four types of jobs to be distinguished. A job with high psychological job demands and few opportunities for control (*high strain jobs*) would produce high levels of stress, because employees would be unable to deal adequately with the demands of their tasks. There is no scope to experiment with the way the tasks are performed, so employees do not have the opportunity to acquire new skills and knowledge. Jobs with a combination of high psychological job demands and many opportunities for control (*active jobs*) offer employees both challenge and opportunities to cope with these psychological job demands. As a result, they experience relatively little stress and are able to acquire new skills through experimentation. Jobs with low psychological job demands and few opportunities for control (*passive jobs*) offer little challenge and therefore also little stress, but they offer no opportunity for learning. Finally, jobs with low psychological job demands and many opportunities for control (*low strain jobs*) produce little stress and offer the scope for the acquisition of new skills, although the latter effect is partially countered by the lack of challenge (Karasek & Theorell, 1990; Taris et al., 2003a).

In 1988, Johnson and Hall expanded the Job Demand-Control model into the Job Demand-Control-Support model. Johnson and Hall (1988) criticized Karasek's (1979) model for the fact that it did not include any relevant social environment aspects. They enlarged the model by adding one social factor of the work situation: *social support*. They suggested that social support acts as a buffer in the strain hypothesis; social support mitigates the negative effects on stress of having high psychological job demands and few opportunities for control. In response, Karasek and Theorell (1990) argued that receiving social support also encourages the acquisition of new knowledge. This implies that the Job Demand-Control-Support model is also suitable for looking at how to maximize learning behavior and continuous development of employees.

### ***Research on the active learning hypothesis***

Taris et al. (2003a) conducted a longitudinal study into the active learning hypothesis among Dutch teachers, showing that having many opportunities for control indeed has a positive effect on informal learning at the workplace. However, high psychological job demands were associated with a *low*, rather than a high degree of informal workplace learning, which may have been due to the relatively high demands experienced by the incumbents of their sample (cf. Karasek & Theorell, 1990, who proposed that job demands may be so high as to "overwhelm" employees, thus hindering employee learning).

Other studies reported more support for the active learning hypothesis. Parker and Sprigg (1999) found that the best learning opportunities exist in active jobs. A cross-sectional study by Dollard et al. (2000) also found support for the active learning hypothesis, namely that active jobs (combination of high psychological job demands and extensive opportunities for control) create the best opportunities for learning. The most significant conclusion of Holman and Wall (2002) from their three studies (two cross-sectional and one longitudinal) was that high control is conducive to informal learning at the workplace, and that in turn ensures that workers are better able to cope with the psychological demands of the work. *Perceived* opportunities for control have also been found to predict informal learning at the workplace (Rousseau & Vallerand, 2000; Yamauchi, Kumagai & Kawasaki, 1999).

Based on these findings and in line with the active learning hypothesis formulated by Karasek and Theorell (1990), we expect that:

*H1a: Managers with high psychological job demands and many opportunities for control (active jobs) learn significantly more informally at the workplace than managers with other types of jobs.*

*H1b: Managers with low psychological job demands and few opportunities for control (passive jobs) learn significantly less informally at the workplace than managers with other types of jobs.*

Researchers agree about the positive effects of job control and social support on learning, but opinions are divided on the influence of psychological job demands. Taris and Kompier (2005) admitted that it is at least uncertain whether psychological job demands have the same positive effects on informal learning at the workplace as job control. Furthermore, it is still not clear how social support relates to the active learning hypothesis of the Job Demand-Control model. The next section of this paper explores the relationship between social support and informal learning at the workplace further through various studies.

### ***Social support***

Karasek and Theorell (1990, p.69) stated that ‘social support at work refers to overall levels of helpful social interaction available on the job from both co-workers and supervisors’. Learning is a social process. It is important to learn with and through others (Gherardi, Nicolini & Odella, 1998; Lave & Wenger, 1991; Richter, 1998). Tannenbaum (1997) and Tracey et al. (1995) found that employees learn more from informal sources (like supervisors and colleagues) than from formal learning activities offered by their organizations, because supervisors and colleagues give them support and feedback, that enables the employees in question to learn and to implement new ideas. Belling, James and Ladkin (2004) argued that *perceived* social support is the most important factor because people’s needs in this respect are very personal. Supervisors and colleagues can stimulate a manager’s informal learning at the workplace by creating a situation in which it is clear what is expected of him or her and by encouraging the manager to talk about problems encountered at work. This is expected to have a positive influence on the self-image of the manager concerned and to reduce his or her feelings of insecurity. Based on the findings outlined above, we expect that:

*H2a: Support from colleagues moderates the effect of psychological job demands on informal learning at the workplace by managers.*

*H2b: Support from colleagues moderates the effect of job control on informal learning at the workplace by managers.*

*H3: Support from colleagues has a significant positive effect on informal learning at the workplace by managers.*

### ***Supervisor support: Leader Member Exchange model***

Findings of Bliese and Castro (2000) and Tannenbaum (1997) show that direct supervisors can make an active contribution to the professional development of employees by explaining the work situation to them and giving them feedback. The explanation given by Van der Sluis and Hoeksema (2001) for the success of support received at the workplace for managers is that managers who are supported by their immediate supervisors are probably given more information and encouragement by their supervisors. They are approached by their supervisors in a positive way, as a result of which the managers are given more opportunities to learn and they perform better.

To discover exactly what support from supervisors at the workplace entails, we examined the *Leader-Member Exchange (LMX) model* (Dansereau, Graen & Haga, 1975). The model describes the relationship between people in positions of leadership and their subordinates as a social exchange process. As many leaders operate under time pressure, they maintain different relationships with different subordinates. Two groups develop: the leader's in-group and their out-group. Members of the in-group have what is called a 'leadership exchange' with the leader, which means that they get preferential treatment from the leader based on, for instance, competences or reliability, in exchange for which they are given more freedom at the workplace. Members of the out-group have a 'supervisory exchange' with their leader and only receive the strictly necessary supervision and guidance (Dansereau et al., 1975; Dienesch & Liden, 1986). Substantial empirical support has been found for the LMX model over the years (e.g., Bauer & Green, 1996; Driver, 2002; Ilies, Nahrgang & Morgeson, 2007).

Based on a literature study, Dienesch and Liden (1986) concluded that three dimensions best characterize the leader-member exchange relationship: a) the *perceived contribution* to the exchange relationship: the perception of the number, direction and quality of the activities directed at reaching shared goals; b) *loyalty*: open support for the goals and for the individual supervisor or subordinate; c) *affection*: mutual affection between the supervisor and subordinate, that is based more on interpersonal attraction than on professional values. These three dimensions were incorporated into the operationalization of *supervisor support* in the present study. However, as the present study focused on individual learning by managers, we only looked at the support received by the subordinate (the manager here) from his or her immediate superior and not the consequences that support can have for the supervisor in question.

Driver (2002) studied the LMX model in relation to learning within organizations. Her hypothesis was that subordinates who receive relatively little support from their supervisors and therefore only have a 'supervisory exchange', have fewer opportunities to learn than subordinates who are given a relatively substantial level of support. She hypothesized that this would probably be because there would be less scope for experimenting in the absence of this additional guidance from the supervisor. This hypothesis was confirmed in her study of employees. Based on these findings, we drew up three more hypotheses:

*H4a: Supervisor support has a significant moderating effect on the influence of psychological job demands on informal learning at the workplace by managers.*

*H4b: Supervisor support has a significant moderating effect on the influence of job control on informal learning at the workplace by managers.*

*H5: Managers who receive relatively good support from their supervisors, score significantly higher on informal learning at the workplace than managers who receive relatively little support from their supervisors.*

## **Method**

### ***Participants***

A study among all 95 home care organizations in the Netherlands with more than 100 employees was performed in 2004. The home care organizations were approached in writing, inviting them to take part in a large-scale research study of home care in the Netherlands. Of these organizations, 82 (86.3%) agreed to participate in this study. Questionnaires were then

sent to the home addresses of all employees of the participating organizations. Participation was voluntary and the anonymity of the participants was guaranteed throughout (Taris et al., 2003b). The average response rate among all employees was 48.7%,  $N = 57,963$ . Comparison of the sample to the population revealed that the first was representative for the last in terms of gender, level of education, age and job type.

Only the questionnaires completed by managers working in home care organizations were used for the present research study ( $N = 1,588$  managers; 86.8% female). The average age of the male managers was 45.37 years ( $SD = 6.99$ ) and the average age of the female managers was 46.11 years ( $SD = 8.30$ ). The average length of service of the managers working in home care was 11.71 years ( $SD = 9.07$ ).

### **Measures**

*Informal learning on the job* was measured on a four-item scale based on Karasek's (1985) Job Content Instrument. One of the items was 'In my work I am challenged by new problems' (1 = 'never', 4 = 'always',  $\alpha = .78$ ).

*Psychological job demands* was measured on a five-item scale based on Karasek's (1985) Job Content Instrument. A typical item was 'Do you have to work under pressure of time?' (1 = 'never', 4 = 'always',  $\alpha = .86$ ).

*Job control* was measured on a three-item scale, also based on Karasek's (1985) Job Content instrument. A typical item from this scale was 'Do you have freedom when doing your work?' (1 = 'never', 4 = 'always',  $\alpha = .71$ ).

*Supervisor support* was measured on a twelve-item scale based on the twelve-item LMX scale devised by Wakabayashi & Green (1984). One of the items was 'My supervisor helps me with problems' (1 = 'never', 5 = 'always',  $\alpha = .92$ ).

*Colleague support* was measured using the questionnaire devised by Van Veldhoven and Meijman (1994). One of the items on this scale reads 'Can you ask your colleagues for help if necessary?' (1 = 'never', 5 = 'always',  $\alpha = .76$ ).

### **Statistical analysis**

Pearson correlation coefficients were computed to investigate the relationship between the study variables. Table 1 presents the means, standard deviations and correlations for the study variables.

Table 1 Correlations, means and standard deviations among the study variables (N = 1,588)

	(1)	(2)	(3)	(4)	(5)	<i>M</i>	<i>SD</i>
(1) Informal learning	1.00					2.79	0.51
(2) Psychological job demands	0.08	1.00				2.71	0.55
(3) Job control	0.35	-0.06	1.00			2.99	0.47
(4) Supervisor support	0.37	-0.17	0.32	1.00		3.33	0.77
(5) Colleague support	0.24	-0.19	0.26	0.45	1.00	3.93	0.61

NB. Correlations of 0.10 and higher are significant at  $p < 0.05$

Next a step-wise linear regression analysis was performed ( $N = 1,570$ ), firstly to determine what the predictor values (main effects) were of the separate independent variables (psychological job demands, job control, supervisor support and colleague support) on the dependent variable ‘informal learning on the job by managers’. The main effects of the independent variables were entered in block 1. Next we looked at the interaction effects between the independent variables. To determine the 2-way interaction effects for psychological job demands, job control, supervisor support and colleague support, these variables were first standardized. Then the interaction variables were created by calculating the products of the standardized scores (Aiken & West, 1991). The five two-way interaction variables were placed in block 2 of the regression analysis. Two 3-way interaction variables were created in the same way from the interactions between supervisor support, psychological job demands and job control and between colleague support, psychological job demands and job control. These 3-way interaction effect variables were entered in block 3 of the regression analysis.

## Results

The regression analyses reported in Table 2 show that all the main effects of the independent variables on informal learning on the job were significant: the percentage of explained variance ( $R^2$ ) of all the independent variables from block 1 was significantly greater than zero (23.1% in total,  $F(4,1565) = 117.38, p < .001$ ). Hypothesis 3 of the present study stated that colleague support has a significant positive effect on informal learning at the workplace by managers. This hypothesis was confirmed with a significant and positive beta coefficient of 0.08. Thus, when colleague support increases, informal workplace learning by managers will also increase. Hypothesis 5 stated that supervisor support has a significant positive effect on informal learning at the workplace. This hypothesis was confirmed with a significant positive beta coefficient of 0.286. Finally, job control ( $\beta = 0.262$ ) and supervisor support ( $\beta = 0.286$ ) had the strongest predictive effect on informal learning at the workplace by managers.

It is interesting to note that the percentage of explained variance of all independent variables, while significant, was relatively weak ( $R^2$  psychological job demands = .006,  $R^2$  supervisor support = .087 and  $R^2$  colleague support = .005), with the exception of job control. The percentage of variance explained by job control ( $R^2 = .132$ ) was moderate,  $F(2,1567) = 126.153, p < .001$ .

Table 2 Results of the regression analysis with informal learning on the job as dependent variable

Independent variable	<i>F</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	Beta ( $\beta$ )
<i>Main effects (block 1)</i>				
- Psychological job demands				.154**
- Job control				.262**
- Supervisor support				.286**
- Colleague support				.080*
	117.380	.231	.231	
<i>2-way interaction effects (block 2)</i>				
- Psychological job demands $\times$ job control				-.004
- Supervisor support $\times$ psychological job demands				.023
- Supervisor support $\times$ job control				.024
- Colleague support $\times$ psychological job demands				-.028
- Colleague support $\times$ job control				.033
	52.727	.233	.002	
<i>3-way interaction effects (block 3)</i>				
- Supervisor support $\times$ psychological job demands $\times$ job control				-.012
- Colleague support $\times$ psychological job demands $\times$ job control				.056
	43.616	.235	.002	

NB. \* =  $p < .01$ , \*\* =  $p < .001$

Addition of the 2-way and 3-way interaction effect variables did not account for a significant proportion of the variance in informal learning. In both steps a mere .2% extra variance ( $\Delta R^2$ ) was accounted for. Hypothesis 1a stated that managers with active jobs score significantly higher on informal learning at the workplace than managers with passive jobs or with high strain or low strain jobs. Hypothesis 1b stated that managers with passive jobs score significantly lower than managers with active jobs or with high strain or low strain jobs. The interaction effect between psychological job demands and job control was not, however, found to be significant on informal learning at the workplace (Hypotheses 1a and 1b rejected).

Hypotheses 2a and 2b stated that colleague support has a significant moderating effect on respectively the influence of psychological job demands and the influence of job control on informal learning at the workplace. However, the corresponding interaction effects of colleague support and psychological job demands and of colleague support and job control on informal workplace learning were not significant (Hypotheses 2a and 2b rejected). Hypotheses 4a and 4b stated that supervisor support has a significant moderating effect on respectively the influence of psychological job demands and the influence of job control on informal learning at the workplace. Again, the corresponding interaction effects of colleague support and psychological job demands and of colleague support and job control on informal workplace learning were not significant (Hypotheses 4a and 4b rejected).

## Discussion

This study investigated the effects of task characteristics and social support on informal learning at the workplace by social care managers. A combination of high psychological job demands and many opportunities for control was expected to result in the

highest level of informal learning on the job (Karasek & Theorell, 1990). The perception of social support from colleagues and supervisors was also expected to be conducive to informal workplace learning (Tannenbaum, 1997). These relationships were investigated using a cross-sectional study among 1,588 managers in the Dutch home care sector. The results of the regression analysis show that task characteristics and social support had a positive effect on informal learning at the workplace. It was found that job control had a stronger positive influence on informal learning at the workplace among managers than psychological job demands. This supports the position of Taris and Kompier (2005) that it is highly uncertain whether psychological job demands will have the same positive effects on informal workplace learning as job control. In the present study no interaction effect was found between psychological job demands and job control: any negative effects on the amount of informal learning on the job by managers due to too high psychological job demands were probably not moderated by a substantial amount of job control. Further, we found that support from colleagues and supervisors had a significant positive effect on informal learning at the workplace, but this was not due to being able to cope better with the psychological demands of the job (Belling et al., 2004) or by increased opportunities for control (Driver, 2002). The results also showed that job control and supervisor support had the strongest effects on informal learning at the workplace among managers.

### ***Study limitations***

In order to appreciate the findings of the present study, we must first discuss some of its limitations and shortcomings. First, a relatively large number of respondents participated in the study. Although this is desirable from the point of statistical power, it also means that the relevance of the findings may be limited due to small effect sizes. Indeed, although a number of effects were significant, most of these were not very strong. In this sense, the practical relevance of the present set of findings should not be overestimated.

Second, the study had a cross-sectional design, meaning that the associations between the study variables cannot be interpreted causally. Theoretically, it is possible that the work characteristics included in this study and informal learning affect each other mutually, e.g., because high levels of learning will lead managers to perceive their tasks as less demanding (they know better how to deal with their demands, cf. Karasek & Theorell, 1990). In practice, however, such "reversed causation" effects tend to be weak (De Lange, Taris, Kompier, Houtman & Bongers, 2004). Therefore, it seems likely that the associations reported in the present study reflect for the most part the effects of work characteristics on learning, and not vice versa.

Third, this study used self-reported measurements. These subjective measurements do not, for instance, measure actual job control but *perceived* job control (De Jonge, Janssen & Van Breukelen, 1996; De Jonge et al., 1999). Van der Doef and Maes (1999) concluded that the hypotheses taken from the Job Demand-Control model are more often supported in studies which use subjective measurements, because a self-reporting bias can occur, which overestimates the effects of task characteristics. However, Wall et al. (1996) argued that this risk does not apply to the moderator effect of social support, whereas Schaubroeck and Merritt (1997, p.751) claimed that 'the construct of most importance is an individual's personal belief in his or her control over the work situation'. Future research into the Job Demand-Control model may give greater value to the use of objective measurements to supplement subjective measurements, including expert observations to measure the real level of social support at the workplace.

Finally, it should be noted that the present study included only a limited set of work

characteristics as predictors of informal learning. Although the choice for our measures was guided by a major work stress model (i.e., Karasek and Theorell's, 1990, Job demands-control-support model), it is likely that other work characteristics may also affect the way managers acquire new skills and knowledge (Taris & Kompier, 2005). For example, the present study focused on leader-member exchange relationships as a measure of social support received by the employee. However, there are many more leadership styles, and some of these can be easily related to workplace learning. E.g., although a laissez-faire leadership style is not usually considered to have positive effects on followers' well-being and performance (cf. Sidle, 2007), laissez-faire leaders provide their subordinates with the decision latitude they need to experiment with new ways of dealing with one's job demands. Conversely, authoritarian leaders deny their subordinates such opportunities. All in all, it would seem that the association between leadership style and subordinate learning is a potentially fruitful area for further research.

### ***Practical and theoretical implications***

In spite of these limitations, the present findings have important practical and theoretical implications. Practically, it would not be advisable to put a great deal of emphasis on the *joint* effects of psychological job demands and job control. The findings of this study failed to confirm the idea that job demands and job control interact statistically in determining work outcomes (i.e., learning; cf. Karasek & Theorell, 1990). This view has been expressed before: e.g., based on a re-examination of the studies reviewed by Van der Doef and Maes (1999), Taris (2006) concluded that statistical interactions were supported in only 10% of the tests conducted to test this interaction - little more than chance level. In this respect it comes as no surprise that no interactions were found in this study.

Receiving support at the workplace, on the other hand, was found to be important in improving learning opportunities on the job for the home care managers. In practice these factors should be taken into consideration, because they have a positive influence on managers' on-the-job informal learning. To create a stimulating work environment for managers, they need to have the opportunity to control things, to experiment and to make mistakes. It follows naturally from this that they should be given the support they need to do this (especially by their own managers).

The most important theoretical implication of this study stems from the fact that no interaction effects were found. As Karasek and Theorell's (1990) Demand-Control interaction is seemingly irrelevant from a practical viewpoint, the question must be asked as to whether it serves any purpose to carry out further research into the application of this model to informal learning at the workplace. Rather, it would seem that researchers should invest effort in examining the effects of other workplace-related factors that affect workplace learning. In this sense, researchers would be advised to study informal on-the-job learning in a broader context, taking other work characteristics (such as variety) and personality constructs (such as motivation, intelligence and prior learning, Poell et al., 2004; Van der Doef & Maes, 1999) into account.

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