Understanding What Drives Informal Learning at Work: An Application of the Resource-Based View

Debora Jeske
Edinburgh Napier University, United Kingdom

Christian Stamov Roßnagel
Jacobs University Bremen, Germany

The resource-based view identifies a number of factors that may influence employees' informal learning. In a cross-sectional survey of 113 German employees in the energy sector, we examined a number of potential predictors of informal learning and a more positive informal learning attitude. The results showed that proactive help-seeking and professional self-efficacy were positive predictors of informal learning. Employees who were older, who enjoyed learning, sought help and were self-efficacious learners had a more positive attitude towards informal learning. Employees who had a more positive attitude about informal learning rated organisational learning provisions as less important, potentially due to being proactive help-seekers. Managers rated organisational learning resources as less important than non-managerial employees. However, managers also reported higher professional self-efficacy. These circumstances may also influence their decision-making regarding the need to provide learning resources to others in the workplace.

Keywords: informal learning, self-efficacy, help-seeking, learning resources, resource-based view

Introduction

Strategies aimed at building the potential of one's staff are usually supported by formal training. Organisations recognise that human resources are also a resource of competitive advantage, hence the need for continuous investment in training, employee engagement, and talent management. However, both the content and process of learning in organisations are subject to individual and organisational learning (Antonacopoulou, 2006). Organisations wishing to maintain a competitive advantage need employees that are willing to contribute to organisations by continuously developing their skills and capabilities (Fiol & Lyles, 1985; Senge, 1990). Organisations increasingly rely on the flexibility, creativity and skills of their employees in order to stay competitive and develop innovative ideas. If there are no learning structures in place, employees often engage less in learning activities (Antonacopoulou, 2006). Not surprisingly, companies invest

heavily in formal and structured employee development. This approach often involves seminars and courses, many of which are off-the-job activities (Clarke, 2004; Marsick, 2006). The activities might not necessarily take place in the work setting (e.g., the training can take place in specialised training or assessment centres, colleges and schools).

Recent research acknowledges the relevance of informal learning and the importance of both encouraging and acknowledging it at work (Beck, 2012). Informal learning has been defined as on-the-job-learning (Clarke, 2004) that may take place in the workplace and outside work. Indeed, the world of work presents employees with numerous opportunities to learn and develop their capabilities and skills (Chen, Kim, Moon, & Meriam, 2008). This type of learning is predominantly initiated by the learner, motivated by the need to develop oneself, and occurs in more informal rather than formal training settings (Noe, 2013). Informal learning may emerge as individuals acquire new skills and knowledge while working with others, shadowing them, and working on different and challenging assignments. In this paper, the focus is on informal learning on the job. The article is organised in several sections. First, we outline how the resource-based view (Grant, 1991) may help to explain informal learning. Second, we present our hypotheses. This is followed by the methods and the discussion of our results. The final section includes a discussion of potential practical repercussions and lessons relevant to organisational learning and managers responsible for supporting learning at work.

An Application of the Resource-Based View to Informal Learning

Both formal and informal learning are required to expertly navigate the challenges that employees face during their working life (Tynjälä, 2008). Both contribute to maintaining a competitive advantage, not just for the organisation, but also for the employees themselves. Past research has shown that both employees' resources and organisational resources contribute and mutually reinforce in informal learning situations (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). The resource-based view by Grant (1991) may be important here as it connects organisational strategy, resources and skills. According to this view, strategy formulation involves five elements: (a) analysing an organisation's resource base; (b) appraising the organisation's capabilities; (c) analysing the profit-earning potential of the resources and capabilities located in the organisation; (d) selecting an appropriate strategy and, where required, also (e) extending and upgrading the resources and capabilities of the organisation (Grant, 1991).

The resource-based view represents an organisational 'lens' through which it is possible to understand the links between resources, strategies and actions. However, the extent to which organisational resources

exist, and the degree to which they will support learning, often depends on situational circumstances and other factors. This is important as informal learning is often a part of employee behaviour that heavily depends on opportunity – rather than on structure and a training budget. Informal learning captures employee behaviours that are not necessarily reflected in organisational provisions, and, in the absence of resources and strategies, employees are unlikely to have such opportunities at work.

In other words, we propose that Grant's (1991) view can also be applied to understanding the elements that contribute to informal learning of individuals within an organisation. We therefore use the resource-based view as a general framework to understand informal learning, rather than a predictive model, as has been discussed in regard to the resource-based view (Barney, 2001).

Past work has shown that resources may also include employee-shaped variables such as specific capabilities (Galbreath, 2005). Even more so, we suggest that many of the organisational elements shape and are influenced by individual circumstances – all of which may facilitate or hinder employees' informal learning. In addition, these resources may contribute to the employees' capabilities and competitive advantage, as well as to the strategies that contribute to and feed back into the pool of resources in turn.

Resources. Organisations make numerous decisions that affect their resource allocation, their capabilities, and their training strategies, in order to build and pursue a competitive advantage. Resources may take different forms. For example, a competitive advantage may be gained by investing into employee learning, promoting employee engagement with learning activities and, specifically, by providing them with the resources to engage in continuous learning via knowledge-sharing (Llorens, Schaufeli, Bakker, & Salanova, 2007; Saks, 2006; Tynjäla, 2008). Resources may determine the extent to which an organisation will provide employees with the necessary provisions and learning conditions that support learning formally and informally. Moreover, employees need to be willing to utilise those options (Billett, 2004), in order for resources to have the desired outcome of organisational learning. This may be fostered by a positive training climate at work (Tracey & Tews, 2005) as this can further support informal learning.

A positive learning culture is likely to feature norms and values that encourage learning, supports the transfer of what is learned (Tracey, Tannenbaum, & Kavanagh, 1995). Jobs that provide employees with development opportunities in organisations have also been shown to establish a job development climate positively related to employees' affective commitment (Armstrong-Stassen & Schlosser, 2008). A number of studies have demonstrated the merits of employees being exposed to mentally demanding and

stimulating learning opportunities in the workplace (Marquie et al., 2010; Schooler, Mulatu, & Oates, 1999). This research has shown that such opportunities may promote cognitive functioning, which may enhance cognitive performance as we age (Potter, Plassman, Helms, Foster, & Edwards, 2006). This means learning resources are key to fostering the overall capability of employees.

Capabilities. Employees' self-efficacy and motivation to learn may also play an important role in shaping employee capabilities and, via their combined potential, organisational capabilities to deal with situations that require rapid learning. With respect to learning, self-efficacy can be defined as a person's belief as to whether or not he or she will be capable of successfully acquiring new knowledge and skills (Noe, 2013). Employees' self-efficacy beliefs capture the capabilities that employees make available to organisations. They are an important determinant of the willingness to learn, especially when the learner faces potential obstacles (Noe, 2013).

Various facets of self-efficacy exist. Learning self-efficacy can be defined as the perceived ability of individuals to acquire and apply new knowledge and skills. It is negatively related to job content plateauing, particularly among older managerial and professional employees (Armstrong-Stassen, 2008). Memory self-efficacy captures the perceived ability of individuals to remember and recall information and details. Both facets are influenced by age, education and prior knowledge (Hastings & West, 2011), as well as continuous learning opportunities to adapt to life circumstances (Judge & Ilies, 2002). Generally, older workers are less likely to participate in formal as well as informal training (see review by Kyndt & Baert, 2013), in part due to seniority and the lack of opportunities being made available to them within their companies (Schulz & Stamov Roßnagel, 2010).

Professional self-efficacy is based on both learning and memory self-efficacy, but this concept further considers employee interactions with others as part of their professional role or position. The concept of professional self-efficacy recognises that we also evaluate our abilities in line with the roles we take on. Individual learning reflects interests, past experiences, as well as the social identity of the learner, all of which are also influenced by the professional culture (Antonacopoulou, 2006). One's professional self-efficacy is facilitated by one's learning experience and understanding of the position, the challenges that arise in one's job, and the willingness to tackle whatever new challenges the individual will face in the future.

Since informal learning is self-motivated and learner-imitated, informal learning is also likely to be driven by the confidence an employee has in his or her ability to succeed (which may be based on their perceived memory, learning and professional self-efficacy; Abele, Stief, & Andrä, 2000; Zelinski & Gilewski, 2004). Professional self-efficacy enables employees to deal with

changes in a proactive, rather than reactive manner, which is why experience (often correlated with age) will help develop one's professional self-efficacy.

Informal, as well as formal, activities and opportunities for development play an important role in supporting practice-based learning amongst professionals (Gold, Thorpe, Woodall & Sadler-Smith, 2007), and maintaining the skills and capabilities of all employees overall. Participation in work-related learning is also predicted by employee self-efficacy (Kyndt & Baert, 2013). Informal learning attitude may similarly predict informal learning outcomes. Past work suggests that attitude and participation in both voluntary and informal work-related learning are correlated (Hurtz & Williams, 2009; Maurer, Wrenn, Pierce, Tross, & Collins, 2003).

This suggests that the various sub-facets of self-efficacy may play an important role in workplace learning, as they may foster expertise as well as a willingness to self-improve. Learning success (and the experience of difficulties) is very likely a matter of how much room an employee feels there is for such development (e.g., in terms of opportunities, time and materials). In addition, since informal learning is self-motivated and initiated by the learner, informal learning is also likely to be driven by the confidence an employee has in his or her ability to succeed (which may be based on their perceived memory, learning and professional self-efficacy; Abele et al., 2000; Zelinski & Geliwski, 2004). More capable (self-efficacious) employees are more likely to be able to contribute to new ideas, innovation and thus contribute to the organisation's overall competitive advantage.

Competitive advantage. A strong belief in the merit of continuous improvement in combination with organisational encouragement may also support learning in organisations (Antonacopoulou, 2006). Both play a role in achieving and maintaining a competitive advantage (e.g., in terms of creativity or innovation, which may support patent development and financial performance). Employees' expectations about building their knowledge and skills while at work and their enjoyment of learning at work may further contribute to learning on the job. Maurer et al. (2003) found that self-efficacy for learning and development was linked to the improvability belief of career-relevant skills. Greater informal learning and a positive learning attitude may represent a competitive advantage by encouraging unstructured and self-initiated learning and knowledge sharing. How competitive advantage translates into strategic actions in the organisation may depend in particular on what strategies take precedence. For example, if there are knowledge creation and support strategies in place, it is also more likely that these will result in actual action plans to support learning activities and structures that improve knowledge building, sharing and management.

Strategies. Presenting employees with learning opportunities on the job may present an important organisational strategy by managers and employ-

ers. Only when managers give individuals the opportunity and room to learn can they expect their employees to engage in informal learning. Indeed, Van der Heijden, Gorgievski, and de Lange (2015) observed that the learning value of the job played a positive role in personal flexibility, anticipation and optimisation – some of the key dimensions of employability – using supervisory ratings of employees. They concluded that positions that provide learning opportunities (learning value) are essential to sustainable employability (Van der Heijden et al., 2015). However, they also noted that age interacted with the learning value of the job. The relationship was stronger when self-rated occupational expertise was higher (Van der Heijden et al., 2015).

Focus of the Study and Hypotheses

The purpose of the study is to examine how employee and organisational factors may, in line with the components of the resource-based view, influence informal learning attitude and informal learning in an organisational setting in a German company. The first set of hypotheses focus on employee-related predictors of learning, while the last hypothesis focuses on organisational predictors of learning.

H1a *Professional, learning and memory self-efficacy increase learning on the job.*

H1b *Self-efficacy in these three domains predicts a more positive attitude towards informal learning at work.*

H2a *Satisfaction with learning, the belief in self-improvement, and proactive help-seeking increase learning on the job.*

H2b *Satisfaction with learning, the belief in self-improvement and proactive help-seeking predict a more positive attitude towards informal learning at work.*

H3 *A positive training climate at work, the perceived availability of learning-related provisions, and the organisational striving towards improvement increase employees' self-reported learning on the job.*

Method

Procedure

Data for this study were obtained in cooperation with a medium-sized German company in the energy sector. Employees were invited to participate in the on-line survey via an e-mail sent out by the Human Resource department. Participation was voluntary. For confidentiality reasons, the name of the company and exact statistics about the overall employee size or characteristics have been omitted. The survey required participants to complete several self-report measures. They rated themselves in terms of their

informal learning, their attitude towards informal learning, learning opportunities at work, the importance of learning provisions at work. They were also asked to report individual and organisational improvement efforts, and the general climate at work. The self-efficacy measures were presented last to avoid carry-over effects. The order of items within each scale was randomised. Finally, participants provided their demographics and information about their role in the organisation.

Participants

The final dataset included the complete responses from 113 volunteers. The response rate was just over 10% – a result of asking employees to complete the survey during the work day and the topic (informal learning rather than company training provisions). This response rate is similar to other, purely voluntary organisational surveys that we have previously conducted. Most of our participants were male (67.3%; female 32.7%) and the average age was 40.77 years (SD = 9.7, range 19 to 61 years). A third (32.7%) were aged between 19 to 35 years old; 46.9% were between 36 up to 50 years old and the remaining 20.4% were between 51 and 61 years old. The age and sex distribution of the survey sample matched the company's overall characteristics. Forty three percent of the participants reported university entry qualification, 42% had finished a secondary modern school ('Realschule') and 14.2% had visited the German 'Hauptschule' (obtaining a GCSE equivalent). Participants' tenure was 15 years on average (SD = 9.95) and 19.9% stated they were in a managerial position.

Measures

Employee characteristics, learning experiences and organisational characteristics were assessed with self-report measures. The organisation was interested in learning more about their workforce's willingness to engage in learning, resulting in several tailor-made scales that were translated into German.

Memory self-efficacy was measured using two, slightly amended items copied from the memory self-efficacy scale (Zelinski & Gilewski, 2004). Participants rated how often they faced a variety of memory problems. The items were: 'I forget where I put things' and 'I begin to do things and forget what I was doing.' The responses ranged from 1 = very often to 4 = very rarely. The correlation between the items was significant but weak (*r* = .327, *p* < .05). The two items were combined into a mean-centred subscale (M = 3.48, SD = 0.56). Higher values represent greater memory self-efficacy.

Professional self-efficacy was assessed using five items from the occupational self-efficacy scale (Abele et al., 2000). A sample item 'I don't have difficulties in reaching my professional goals.' The response scale

ranged from 1 = totally disagree to 4 = totally agree. Higher values represent greater perceived professional self-efficacy (α = .66, M = 3.33, SD = 0.51).

Climate at work (training) was assessed using eight items from the General Training Climate scale (Tracey & Tews, 2005), four items from the managerial support scale and four from the job support scale. An example item was: 'Independent and innovative thinking are encouraged by [my] supervisors.' The response option ranged from 1 = does not apply at all to 4 = totally applies. Higher values suggest greater training support at work (α = .81, M = 2.91, SD = 0.54).

Several scales were produced in collaboration and in response to the organisation's needs and requirements. These are listed below.

Learning self-efficacy was measured using ten items. An example item is: 'I can focus for a longer time, even when it's difficult at times.' The response scale ranged from 1 = strongly agree to 5 = strongly disagree. Higher values represent greater self-efficacy when learning (α = .66, M = 3.62, SD = 0.52).

Learning satisfaction was measured using six items. An example item is: 'I reached my learning goals within the scheduled time.' The response scale ranged from 1 = does not apply at all to 4 = totally applies. Higher values represent greater learning satisfaction (α = .79, M = 3.20, SD = 0.55).

Learning experience (perception of informal learning as easy vs. difficult) was measured using seven items. An example item was: 'I sometimes miss professional support' (reverse-scored). The response scale ranged from 1 = does not apply at all to 4 = totally applies. We used these items to create a mean-centred subscale (α = .82, M = 1.97, SD = 0.61). Lower values represent greater learning difficulties while higher values reflect perceptions of informal learning as easy.

Help seeking was measured using six items. Each item listed a different type of help seeking behaviour. An example item was: 'I have asked colleagues for support with . . .' (e.g., introductions, explanations, etc.). The response scale ranged from 1 = never to 4 = frequently. Higher values represent more help seeking (α = .63, M = 2.33, SD = 0.58).

The importance of learning provisions was measured using five items. An example item was: 'I need to have access to various learning materials (e.g., databases, intranet courses, subject libraries).' The responses ranged from 1 = very unimportant to 4 = very important. The mean-centred composite had low reliability (α = .64, M = 2.44, SD = 0.60). Higher values reflect the participants' beliefs that specific provisions must be in place for them to learn (e.g., in form of time, knowledge, access to media).

Self-improvement expectations were measured using five items. The scale captured future-oriented behaviours, as in what participants felt they ought to do to improve. An example item was: 'I should ask for more su-

pervisory feedback so I can better plan my professional development.' Each item had response options ranging from 1 = does not apply at all to 4 = totally applies. We used all items to create a mean-centred subscale (α = .76, M = 3.14, SD = 1.01). Higher values represent greater intention to engage in more self-improvement.

Organisational improvement expectations were assessed using six items. An example item was: 'My supervisors should help me develop a career plan to support my continuous learning.' The response option ranged from 1 = strongly disagree to 4 = strongly agree. Higher values represent higher support expectations about the support provided by the organisation (α = .76, M = 3.23, SD = 0.94).

The degree of informal learning on the job (informal learning behaviour) was measured using seven items. An example item was: 'I complete different and frequently changing tasks at work.' The response options were 1 = does not apply at all to 4 = totally applies. Higher scores suggest greater learning on the job due to more variety in tasks and demands (α = .76, M = 3.16, SD = 0.48).

Informal learning attitude was measured using six items, one of which was reverse-scored. An example item was 'I enjoy informal learning.' The response scale ranged from 1 = totally disagree to 4 = totally agree. Higher values reflect a more positive attitude towards learning (α = .74, M = 1.89, SD = 0.55).

Demographics were also included, as was information as to whether or not the participant held a managerial (supervisory) position at the time of the survey. This included gender and age (M = 40.77, SD = 9.70). In addition, all participants were asked to state if they had managerial responsibility (n = 22) or not (n = 91).

Results

Data Screening and Preparation for Hypothesis Testing

The correlation matrix outlines the relationship between the different scales (Table 1). Overall, four out of thirteen scales featured lower than desirable reliability (below .70). Nunnally (1978) specified a cut-off point of .7 as acceptable. In order to assess potential overlap between the new scales developed for the organisation, we ran several confirmatory factor analyses using LISREL 9.20. The first analysis included all seven predictors. The results supported a seven-factor structure (one for each scale) ($\chi^2(924)$ = 1384.08, p < .001; RMSEA = .066, 90% CI [.059, .073], SRMR = .096) although some of the model fit indicators were lower than desirable (CFI = .69, NFI = .67). All but three out of 45 indicators loaded significantly onto their assigned factors (t-values > 1.96, p < .05). Further modifications would have improved the model statistics.

Two more confirmatory analyses were conducted to examine if the two

Table 1   Scale Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1												
2	.54**	1											
3	.05	.06	1										
4	−.25**	−.42**	.09	1									
5	.39**	.60**	.21	−.27*	1								
6	.24*	.38**	.23*	−.34**	.42**	1							
7	.48**	.44**	.07	−.22*	.36**	.29**	1						
8	.12	.17	−.11	−.17	.01	.13	.34**	1					
9	−.23*	−.43**	.07	.67**	−.34**	−.33**	−.29**	−.11	1				
10	.35**	.40**	.04	−.26**	.39**	.23*	.43**	.09	−.43**	1			
11	−.12	−.24*	−.05	.12	−.16	−.19*	−.17	.04	.17	−.04	1		
12	.26**	.32**	.21*	−.14	.35**	.12	.39**	.18	−.18	.24**	−.16	1	
13	.31**	.36**	.28**	−.21*	.44**	.34**	.19*	.14	−.17	.19*	−.26**	.21*	1

Notes   (1) IL (informal learning) satisfaction, (2) IL as easy, (3) help-seeking, (4) self-improvement belief, (5) self-efficacy (learning), (6) self-efficacy (memory), (7) self-efficacy (professional), (8) age, (9) organisational self-improvement, (10) climate at work, (11) learning provisions, (12) IL on job (dependent variable 1), (13) IL attitude (dependent variable 2). * $p < .05$, ** $p < .01$.

outcome measures (informal learning on the job and informal learning attitude) loaded onto two separate constructs as we propose, rather than to one construct alone. We first ran the analysis for a two-factor solution, the statistics suggested reasonably good fit ($\chi^2(64) = 121.54$, $p < .001$; RMSEA = .089, 90% CI [.065, .113], SRMR = .095, CFI = .86, and NFI = .76) even before we started to consider potential modifications. The two factors were positively correlated, as we would have expected ($t = 2.94$, $p < .05$). All but one of the 13 indicators loaded significantly onto the specified factors (t-values > 1.96, $p < .05$). The model fit statistics for a one-factor structure incorporating both informal behaviour and attitude items was significantly worse ($\chi^2(65) = 297.79$, $p < .001$; RMSEA = .178, 90% CI [.158, .199], SRMR = .189, CFI = .44, and NFI = .40; $\Delta\chi^2 = 176.25$, $p < .05$). As a result, we retained the two subscales, one for informal learning behaviour and the other for informal learning attitude. The correlations between all measures are presented in Table 1.

Hypothesis Testing

In order to test our hypotheses, we selected stepwise regression, using backward elimination rather than the forward selection method. Backward elimination can be used to reduce the number of predictors and reduce potential over-fitting and multi-collinearity issues (Gunst & Mason, 1977). This is particularly relevant when there are numerous predictors that correlate with one another (as was the case in this sample). Mantel (1970) states that stepdown procedures such as these discard only those variables

that can be dropped without seriously impairing the overall goodness of fit.

Using this approach, the initial model is first fitted with all the variables of interest. In each iteration, the least significant variable is dropped. The model is refitted successively until only the statistically significant variables are retained. This approach therefore enables researchers to identify prevalent predictors. This is important as our selected variables may also have influenced one another (which is in line with the resource-based view by Grant, 1991), making it difficult to separate the effects of the individual variables. In addition, backward elimination would enable us to identify those variables that were the most influential and context-specific predictors in the organisation. A preliminary assessment of normality, linearity, outliers and homogeneity of variance-covariance suggested no issues, except for two outliers that were deleted (N = 111).

Learning on the job was subject to hypotheses 1a/2a and 3. Using a backward elimination regression approach, the role of all predictors (the three concepts of self-efficacy in H1a; learning satisfaction, learning experience as easy, belief in self-improvement and proactive help-seeking in H2a) and the organisation-specific variables (training climate, organisational provisions and striving for improvement in H3) were evaluated together in several iterations until only significant predictors of the dependent variable remained. The result of this process resulted in two predictors, which together explained 27.1% of variance in learning on the job (R^2 = .27, R^2adj. = .25, $F(2, 82)$ = 15.24, $p < .001$): Professional self-efficacy (β = .21, p = .027) and proactive help-seeking from others (β = .45, $p < .001$). Figure 1 outlines the trend for these two predictors in relation to self-reported learning at work.

The results provide partial support for some of the proposed relationships in H1a/2a: Professional self-efficacy and proactive help-seeking increase learning on the job (see Figure 1). At the same time, H3 was not supported: There was no evidence that organisational characteristics such as climate, learning provisions, or striving for organisational and self-improvement influenced learning on the job.

The predictors of informal learning attitude at work were subject to hypotheses 1b and 2b. The predictors included self-efficacy (H1b), learning satisfaction, belief in self-improvements, and proactive help-seeking. However, we also considered age and the organisation-specific variables, in case these variables also played a role in shaping informal learning (although this was not expected). Due to various missing cases, the analysis was conducted with 86 cases. The results of the first analysis including all predictors suggested good fit (R^2 = .45, R^2adj. = .37, $F(11, 73)$ = 5.42, $p < .001$). Again, following backward elimination, only five predictors remained. These predictors explained 39.1% in informal learning difficulty reported by
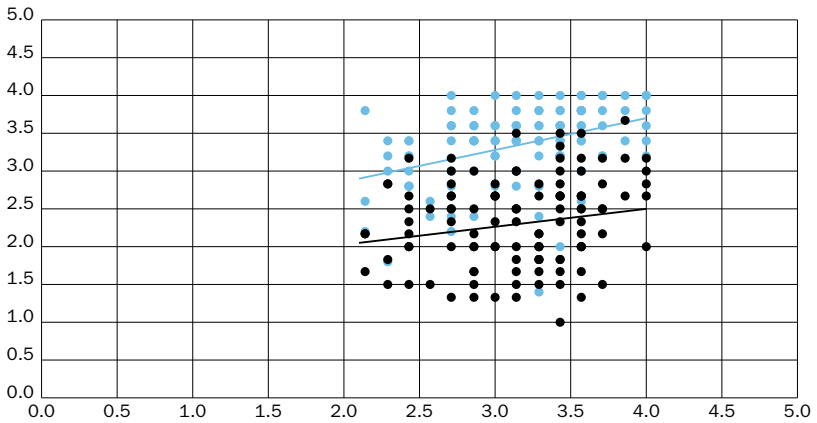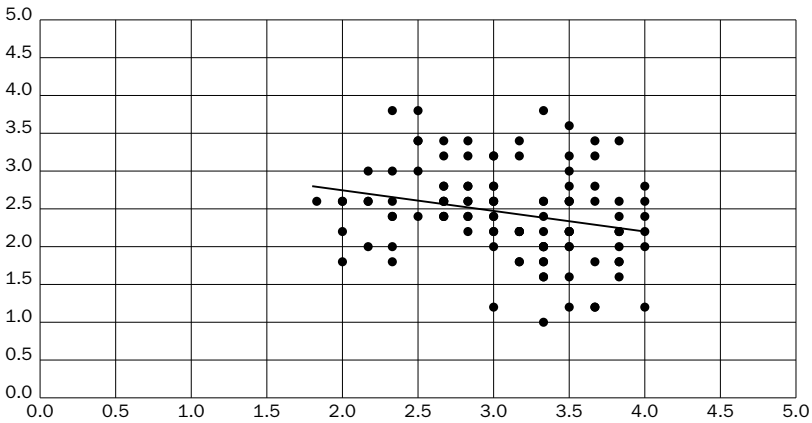
Figure 1   Predictors of Informal Learning on the Job (light – professional self-efficacy, dark – help-seeking)
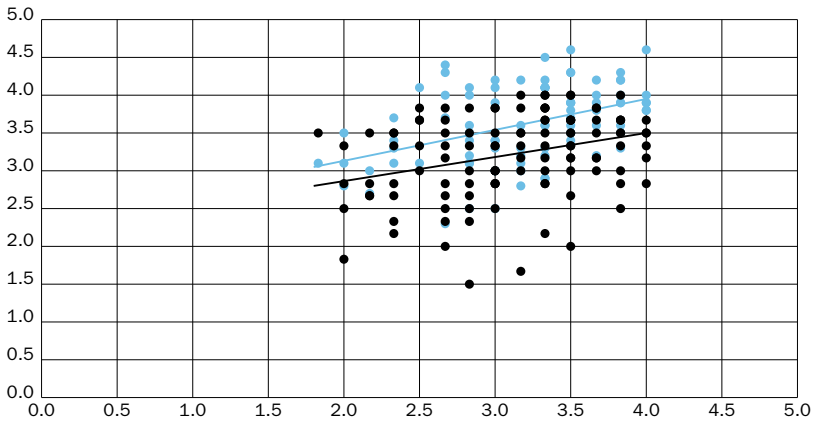
Figure 2   Predictors of Informal Learning at Work (light – learning self-efficacy, dark – learning satisfaction)

participants (R^2 = .39, R^2adj. = .35, F(6, 76) = 8.46, p < .001). As observed in the previous regression, help-seeking (β = .17, p = .064) was a marginally significant predictor to the extent of a positive attitude towards informal learning. Learning self-efficacy (β = .36, p = .001), learning satisfaction (β = .242, p = .033), and age (β = .28, p = .004) were also significant predictors of a positive informal learning attitude. The coefficients suggest that those employees who were more likely to seek help, who reported higher learning self-efficacy and were more likely to gain satisfaction from learning also appeared to have a more positive attitude about informal learning at work (see Figure 2). These results provide partial support for H1b and H2b.

However, two results presented the opposite of what H1 had predicted.

Figure 3   Importance Given to Organisational Learning Provisions as a Predictor of Informal Learning Attitude

The fifth predictor was professional self-efficacy, this was a negative predictor of attitude (β = –.24, p = .038). In addition, the importance placed on organisational learning provisions also played a role in predicting participants' informal learning attitude (β = –.27, p = .004; see Figure 3). However, when we reran the regression analysis (using the enter option) using just those two predictors, only the importance on organisational learning provisions remained a significant negative predictor of attitude (β = –.22, p = .011).

Please note that learning on the job and learning attitude did not differ across non-managerial employees and managers (p > .05). However, participants with managerial responsibility rated their professional self-efficacy significantly higher (M = 3.40, SD = 0.38, n = 22) than participants who did not have such responsibility (M = 3.26, SD = 0.52, n = 91; $F(1, 111)$ = 8.31, p = .005). Second, being in a managerial position played a role in terms of the importance placed on learning provisions ($F(1, 110)$ = 3.95, p = .049; also controlling for attitude), as managers rated learning provisions as less important for themselves (M = 2.21, SD = 0.64, n = 22) than non-managerial employees (M = 2.50, SD = 0.57, n = 91). As noted above, when we reran the analysis and controlled for the importance placed on learning provisions (β = –.24, p = .011), professional self-efficacy was once again no longer a significant predictor of informal learning attitude (β = .15, p = .103).

Discussion

The resource-based view of competitive advantage proposes that resources, capabilities, and competitive advantage all feed into strategy, which in turn feeds back into resources (Grant, 1991). The framework is useful to un-

derstand how the various factors relate to one another. The present paper considers how examples of individual and organisational resources, capabilities, and strategies may feed into informal learning behaviour and shape employee attitudes towards informal learning. Using the results of an organisational case study, we examined which employee and organisation-specific predictors influenced informal learning at work and informal learning attitude amongst employees of a German company.

The present research examined what predicts learning on the job and a positive learning attitude. Considering a range of possible predictors of learning on the job, results showed that only professional self-efficacy and proactive help-seeking predicted informal learning in the organisation, providing partial support for H1a and 2a. However, there was no evidence that organisational characteristics such as climate, learning provisions per se, or organisational striving towards self-improvement influenced informal learning on the job in the company we examined. This means the organisation-specific hypothesis 3 was not supported. One possible explanation is that our analysis focused on the most important predictors. This may have diminished the influence of the potentially overarching and more group-focused variables that had no immediate influence on the everyday learning experience of the employees.

Informal learning attitude was significantly predicted by learning satisfaction, learning self-efficacy, and age. Employee help-seeking was a marginally significant predictor ($p < .10$). Employees who were older, sought help proactively, were self-efficacious learners, and those who enjoyed learning activities also had a more positive learning attitude. These results provided partial support for H1b and 2b. The more positive informal learning attitude amongst older workers may be explained as follows: some organisations expect older workers to take on additional roles, specifically sharing their knowledge with younger colleagues (Beck, 2012). This expectation may not be reciprocated in turn, even when older employees move into new roles and become novices (Beck, 2012). However, older workers are often presented with fewer learning opportunities than their younger colleagues. If an organisation does not include older employees to the same degree, employees may hesitate to share their learning needs with their managers (see also work by Mitton & Hull, 2006). The fact that older employees in our sample had a more positive learning attitude may hint at an alternative route to keep learning. Both younger and older employees derive their sense of competence from their work and learning experiences (Paloniemi, 2006). Engaging in informal learning may help older learners to overcome, at least to some degree, the disadvantageous position they are in when it comes to formal learning opportunities. This is in line with Felstead's (2011) finding that older learners may be left to sort out issues on their own. Those in our

sample, who engaged in more informal learning and proactive help-seeking may have engaged in compensatory strategies to access resources and maintain their capabilities.

However, the importance given by employees to organisational learning provisions was a negative predictor of informal learning attitude. Further analysis showed that participants in managerial positions rated learning provisions as less important than non-managerial employees. Two related explanations may be offered. Harman (2011) reported that senior managers associated the notion of being a 'learner' with being a novice. In addition to fears about being seen as less knowledgeable by engaging in learning, senior managers may also have a potentially greater interest in maintaining their status, rather than engaging in learning that might then challenge their status (Antonocopoulou, 2006). The results may also be explained from another perspective. The importance given to learning provisions was negatively correlated with the employee perceptions of learning. Employees who rated learning provisions as more important also appeared to have more learning difficulty. The value of learning provisions may therefore only be higher for employees who struggle. If learning provisions are viewed as less important by managerial employees themselves (who have higher professional self-efficacy), this raises the following question: to what extent will the importance given to learning provisions by managers also influence the provisions they are willing to provide for their employees? There may be no connection and the personal importance attributed by managers to learning provisions may not necessarily influence resource allocations to employees. Our data did not allow for assessing this possibility further. However, it may be worthwhile to consider the influence of managerial attitudes and learning success on resource allocation.

It is important to recognise here that we need to be careful about the generalisability and robustness of some of our results as some scales in our study had low reliability coefficients (below .7) and relied on self-report from a relatively small sample ($N = 113$). We also need to acknowledge that backward elimination is an approach that has its flaws as potentially significant variables may be dropped in the process due to suppression effects (Howell, 2007), even though they may be significant if they had been added to the last reduced model. However, most of the disadvantages associated with backward elimination also apply to forward selection (Darlington, 1990) and backward elimination may outperform forward selection (Mantel, 1970).

Reflections and Practical Implications

By employing the resource-based view we attempted to understand what drives informal learning in an organisation. However, we readily acknowledge the limitations associated with causal ambiguity, the role of both internal

and external factors that impact organisations, and the generalisability of the findings from one organisation to the next. Identifying opportunities to improve the utilisation of existing resources (Grant, 1991) and recognising the strengths and weaknesses may be important drivers behind informal learning at work. If there are no opportunities and provisions that support learning, organisations will stifle informal learning. In addition, maintaining learning self-efficacy requires employees to be exposed to jobs that foster learning at work (Armstrong-Stassen, 2008). Greater employee self-efficacy may represent, if continuously maintained, an important organisational capability and feed into various human resource strategies aimed at learning and development. If self-efficacy is low, employees are unlikely to succeed when facing learning challenges on the job. Informal learning may not be subject to the same top-down processes as many traditional knowledge transfers. They may encourage a knowledge transfer not only from experts to novices, but also encourage novices to share their knowledge. Grant made the point that 'a key problem in appraising capabilities is maintaining objectivity' (Grant, 1991, p. 121). What he recognised is that managers may not appraise competencies or resources as such. Managers may focus on providing resources only to what they consider to be valid and legitimate training (Antonacopoulou, 2006). This approach may inadvertently encourage employees' depending on organisational resources (Antonacopoulou, 2006). Unfortunately, identifying resources and potential is often what organisations struggle with (Grant, 1991). This also explains why using the resource-based view often results in highly contextualised analyses and organisational findings that cannot be readily generalised. This particularly applies to human resources in highly structured organisations with a more traditional perspective on employee development resulting in hiring newly qualified staff or offering formal training, not recognising the potential opportunities within the organisation. This includes resources present in terms of employee expertise and encouraging knowledge exchange across hierarchies and departments to promote learning.

The resource-based framework further suggests that the strategies are based on the resources and capabilities relative to the external opportunities available (Grant, 1991). That is, given the influence of contextual factors on individual learning, the extent of individual learning is subject to the degree to which the organisational context supports learning at work (Antonacopoulou, 2006). The organisational context may be determined by service concerns, but also by strategic decisions about which projects need more resources. Fahy, Easterby-Smith, & Lervik (2013), for example, observed that new projects in high-technology engineering companies are given more resources and are staffed with younger project engineers, many of whom hope that this experience will support their career

ambitions. However, older installations are supported by service engineers who appear to be more at the periphery of the organisation due to working in various geographically separated locations. In addition, due to their expertise with the systems that need to be maintained, the service engineers essentially ended up having less access to resources and support compared to their younger counterparts (Fahy et al., 2013). This means that the organisational practices determine where experts are placed, e.g., to specific resource-impoverished or resource-enriched projects. This may then preclude certain groups at the periphery from knowledge sharing, thus giving these workers fewer or no opportunities to build and share knowledge through interaction with others. This results in unequally distributed power relations that determine participation in learning activities and perceptions of learning activities as desirable and legitimate (Fahy et al., 2013; Jordan, 2010).

Informal learning is determined by the opportunities that are presented internally, although the opportunities may be driven by external forces such as market pressure on the company. These forces may also 'compress' the room for opportunities, potentially due to greater workload, less time to support learning, and fewer learning provisions. However, alternatives exist. Peer mentoring, networking and coaching may represent important informal learning opportunities (Cooper & Kurland, 2002) and might help organisations to address lack of formal learning opportunities, potential resistance to change and employee concerns. 'Creating capabilities is not simply a matter of assembling a team of resources: capabilities involve complex patterns of coordination between people and between people and other resources. [...] A capability is, in essence, a routine, or a number of interacting routines' (Grant, 1991, p. 122). An important point to note here is that employee capability may depend not only on how many learning opportunities are presented, but also the inherent challenge that learning represents for each employee. In other words, we need to recognise that organisational and employee resources may need to be mutually reinforcing for employees to tackle and learn from challenges and opportunities presented to them at work. Future research in this area may explore this possibility.

Conclusions

Both informal and formal learning activities are important for professional and organisational learning (Gold et al., 2007). The results of our case study helped identify several factors that appeared to promote informal learning and a positive attitude towards informal learning in a medium-sized organisation. Employees who sought help proactively and felt more self-efficacious at work reported more opportunities to engage in learning

on the job (in particular, they learn from the challenges they encounter in their jobs). Supervisors may play an important role in that they may encourage help-seeking on the job and determine how supportive the organisational climate is at work. In addition, our study showed that the importance attributed to learning provisions may differ between employees and managerial personnel, potentially as a function of higher professional self-efficacy and status awareness amongst managers. This may create an unfortunate resource gap for employees as they may depend on their managers for learning opportunities and provisions.

This study suggests that managerial support (e.g., in terms of resources) and opportunities presented to employees may depend on managerial perceptions and attributions. This is in line with evidence that managerial encouragement and learning support predict work-related learning (Kyndt & Baert, 2013). In conclusion, informal learning and a positive learning attitude amongst employees may depend on organisational resources and managerial support, as well as on the employees' own capability, learning-related experience and attitudes. Organisations keen to maintain the knowledgeable and engaged workforce required to sustain and potentially promote competitive advantage may therefore wish to re-examine which variables promote formal and informal learning at work in their organisation. We hope that the current case study results provide a few starting points for such assessment.

References

Abele, A.-E., Stief, M., & Andrä, M. (2000). Zur ökonomischen Erfassung beruflicher Selbstwirksamkeitserwartungen-Neukonstruktion einer BSW-Skala [On the economic measurement of occupational self-efficacy expectations: A new BSW scale]. *Zeitschrift für Arbeits- und Organisationspsychologie, 44,* 145–151.

Antonacopoulou, E. P. (2006). The relationship between individual and organizational learning: New evidence from managerial learning practices. *Management Learning, 37*(4), 455–473.

Armstrong-Stassen, M. (2008). Factors associated with job content plateauing among older workers. *Career Development International, 13*(7), 594–613.

Armstrong-Stassen, M., & Schlosser, F. (2008). Benefits of a supportive development climate for older workers. *Journal of Managerial Psychology, 23*(4), 419–437.

Barney, J. B. (2001). Is the resource-based 'view' a useful perspective for strategic management research? Yes. *Academy of Management Review, 26*(1), 41–56.

Beck, V. (2012). Employers' views of learning and training for an ageing workforce. *Management Learning, 45*(2), 200–215.

Billett, S. (2004). Learning through work: Workplace participatory practices. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace learning in context* (pp. 109–125). London, England: Routledge.

Chen, L.-K., Kim, Y. S., Moon, P., & Merriam, S. B. (2008). A review and critique of the portrayal of older adult learners in adult education journals 1980–2006. *Adult Education Quarterly, 59*(3), 3–21.

Clarke, N. (2004). HRD and the challenges of assessing learning in the workplace. *International Journal of Training and Development, 8*(2), 140–156.

Cooper, C. D., & Kurland, N. B. (2002). Telecommuting, professional isolation, and employee development in public and private organizations. *Journal of Organizational Behavior, 23*(4), 511–532.

Darlington, R. B. (1990). *Regression and linear models.* New York, NY: McGraw-Hill.

Fahy, K. M., Easterby-Smith, M., & Lervik, J. E. (2013). The power of spatial and temporal orderings in organizational learning. *Management Learning, 45*(2), 123–144.

Felstead, A. (2011). The importance of 'teaching old dogs new tricks:' Training and learning opportunities for older workers. In E. Parry & S. Tyson (Eds), *Managing an age diverse workforce* (pp. 189–205). Basingstoke, England: Palgrave.

Fiol, C. M., & Lyles, M. A. (1985). Organisational learning. *Academy of Management Review, 10*(4), 803–813.

Galbreath, J. (2005). Which resources matter the most to firm success? An exploratory study of resource-based theory. *Technovation, 25*(9), 979–987.

Gold, J., Thorpe, R., Woodall, J., & Sadler-Smith, E. (2007). Continuing professional development in the legal profession: A practice-based learning perspective. *Management Learning, 38*(2), 235–250.

Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review, 33*(3), 114–135.

Gunst, R. F., & Mason, R. L. (1977). Advantages of examining multicollinearities in regression analysis. *Biometrics, 33*(1), 249–260.

Harman, K. (2011). Everyday learning in a public sector workplace: The embodiment of managerial discourse. *Management Learning, 43*(3), 275–289.

Hastings, E. C., & West, R. L. (2011). Goal orientation and self-efficacy in relation to memory in adulthood. *Aging, Neuropsychology, and Cognition, 18*(4), 471–493.

Heijden, B. I. J. M. van der, Gorgievski, M. J., & de Lange, A. H. (2015). Learning at the workplace and sustainable employability: A multi–source

model moderated by age. *European Journal of Work and Organizational psychology, 25*(1), 13–30.

Howell, D. C. (2007). *Statistical methods for psychology* (6th ed.). Belmont, CA: Thomson Wandsworth.

Hurtz, G. M., & Williams, K. J. (2009). Attitudinal and motivational antecedents of participation in voluntary employee development activities. *Journal of Applied Psychology, 94*(3), 635–653.

Jordan, S. (2010). Learning to be surprised: How to foster reflective practice in a high-reliability context. *Management Learning, 41*(4), 391–413.

Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87*(4), 797–807.

Kyndt, E., & Baert, H. (2013). Antecedents of employees' involvement in work-related learning: A systematic review. *Review of Educational Research, 83*(2), 273–313.

Llorens, S., Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exists? *Computers in Human Behavior, 23*(1), 825–841.

Mantel, N. (1970). Why stepdown procedures in variable selection. *Technometrics, 12*(3), 621–625.

Marquie, J. C., Rico Duarte, L., Bessieres, P, Dalm, C., Gentil, C., & Ruidavets, J. B. (2010). Higher mental stimulation at work is associated with improved cognitive functioning in both young and older workers. *Ergonomics, 53*(11), 1287–1301.

Marsick, V. (2006). Informal strategic learning in the workplace. In J. N. Streumer (Ed.), *Work-Related learning* (pp. 51–70). Dordrecht, The Netherlands: Springer.

Maurer, T. J., Wrenn, K. A., Pierce, H. R., Tross, S. A., & Collins, W. C. (2003). Beliefs about 'improvability' of career-relevant skills: Relevance of job/task analysis, competency modelling, and learning orientation. *Journal of Organizational Behavior, 24*(1), 107–131.

Mitton, L., & Hull, C. (2006). The information, advice and guidance needs of older workers. *Social Policy and Society, 5*(4), 541–550.

Noe, R. A. (2013). *Employee training and development* (6th ed.). New York, NY: McGraw Hill.

Nunnally, J. (1978). *Psychometric theory.* New York, NY: McGraw-Hill.

Paloniemi, S. (2006). Experience, competence and workplace learning. *Journal of Workplace Learning, 18*(7/8), 439–450.

Potter, G. G., Plassman, B. L., Helms, J. J., Foster, S. M., & Edwards, N. W. (2006). Occupational characteristics and cognitive performance among elderly male twins. *Neurology, 67*(8), 1377–1382.

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600–619.

Schooler, C., Mulatu, M. S., & Oates, G. (1999). The continuing effects of substantively complex work on the intellectual functioning of older workers. *Psychology and Aging, 14*(3), 483–506.

Schulz, M., & Stamov Roßnagel, C. (2010). Informal workplace learning: An exploration of age differences in learning competence. *Learning and Instruction, 20*(5), 383–399.

Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organisation.* London, England: Century Business.

Tracey, J. B., Tanenbaum, S. I., & Kavanagh, M. J. (1995). Applying trained skills on the job: The importance of the work environment. *Journal of Applied Psychology, 80*(2), 239–252.

Tracey, J. B., & Tews, M. J. (2005). Construct validity of a general training climate scale. *Organizational Research Methods, 8*(4), 353–374.

Tynjälä, P. (2008). Perspectives into learning at the workplace. *Educational Research Review, 3*(2), 130–154.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior, 74*(3), 235–244.

Zelinski, E. M., & Gilewski, M. J. (2004). A 10-item Rasch modeled memory self-efficacy scale. *Aging & Mental Health, 8*(4), 293–306.

Debora Jeske is a Lecturer in Work and Organisational Psychology at University College Cork, Republic of Ireland. The current paper was submitted during her time at Edinburgh Napier University, United Kingdom. Her research interests include psychology and technology at work (including e-HRM, human computer interaction, learning and mentoring at work). *d.jeske@ucc.ie*

Christian Stamov Roßnagel is a Professor of Organisational Behaviour at the Jacobs University Bremen. His research interests include the metacognitive control of learning, work motivation, and e-learning. *c.stamovrossnagel@jacobs-university.de*