

Job-Demand For Learning, Job-Related Learning, and Need For Achievement.

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Abstract

Individual learning is important, as it is both a precursor and an outcome of learning in organisations. Job-related learning is driven by external factors (e.g., the demands of the job) and internal factors (i.e., the personality of the individual). The study examined whether need for achievement moderates the relationship between job-demand for learning and job-related learning. Data were obtained from 153 full-time, white-collar employees from a range of industries. Hierarchical regression analysis using the product term revealed that need for achievement moderates the relationship between job-demand for learning and job-related learning. Specifically, although job-demand for learning is correlated positively to job-related learning for both the high and the low need for achievement groups, this correlation is stronger amongst the high group. The findings are discussed in terms of their implications for future research and practice.

Introduction

Individual learning is important as it is both a precursor and an outcome of learning in organisations (e.g., Argyris & Schon, 1978; Senge, 1992; Tsang, 1997). Interest in the subject of learning has intensified since knowledge and innovation have been acknowledged as sources of competitive advantage (Starkey, 1998) in that they can lead to the development of organization-specific capabilities that are tacit and difficult to imitate.

Both external and internal factors drive individual learning at the job-level. A primary external antecedent of job-related learning is the demand that the job places on the individual to learn. Job-demand for learning, which represents changes in requisite knowledge, roles, responsibilities or functions due to factors such as technological or structural changes, is a primary external antecedent of job-related learning. A primary internal antecedent of job-related learning is the personality of the individual. For instance, traits such as the need for achievement are an internal source of motivation for learning.

Job-related learning has received relatively little scholarly attention although it is recognized as important for organizational competitiveness. Furthermore, to the authors' knowledge, the combined effects of external antecedents and internal antecedents on job-related learning have not been examined. The purpose of this paper therefore is to examine the effects of an external antecedent of job-related learning (i.e., job-demand for learning) and an internal antecedent (i.e., need for achievement) on job-related learning.

Job-related learning

A job can be regarded as a set of activities or tasks that an individual performs to meet a set of objectives. Individuals require specific knowledge and skills to perform their jobs effectively. Job-related learning occurs as individuals acquire knowledge and skills that help them to perform their jobs effectively. Job-related learning is thus critical for individuals to excel in their jobs.

Whilst organizations can and do provide formal learning opportunities for its members, this paper will focus on informal on-the-job learning, which addresses practical skills and knowledge that are obtained from actually performing a job. In this way, we follow the work of McCauley, Ruderman, Ohlott, and Morrow (1994). There is good reason to focus on informal learning because there is evidence that the majority of job-related learning occurs informally on the job (e.g., Lowy, Kelleher, & Finestone, 1986).

“Learning is the process of linking, expanding, and improving data, information, knowledge and wisdom” (Bierly, Kessler, & Christensen, 2000, p. 597). Learning helps to narrow the gap between current knowledge and skills with required knowledge and skills. The knowledge, skills and competencies that individuals currently possess can be rendered unsuitable, insufficient, or even obsolete as the nature of the job changes over time.

Learning manifests cognitively and behaviorally and the outcome of learning is an increase in knowledge or skills. Knowledge, as the final state of pattern-recognition (Boyatzis & Kolb, 1995), helps individuals to achieve both a better comprehension of their jobs and an awareness of techniques that improve their performance. For example, learning can lead to a better conceptualization of one's job and its relationship with other jobs within the organization. From a behavioral perspective, job-related learning includes the ability to translate declarative knowledge into procedural knowledge. Furthermore, positive changes in behaviors, such as the attainment of new skills, are indicators of job-related learning.

Job-demand for learning

Job-demand for learning is the pressure placed by jobs on individuals to learn new knowledge and skills. Furthermore, job-demand for learning refers to the pace and intensity of changes in a job and as such corresponds to the rate and level of learning required to perform a job effectively or to adapt to adverse circumstances. Boyatzis (1982) defined job demands as the specific results required by the job and these can range from operating specific machines to managing a whole organization. Job-demand for learning can increase because of an increase in the complexity of tasks, an increase in the number of tasks, or a change in the types of tasks required to perform a job. Additionally, job-demand for learning can increase due to an increase or change in the roles associated with a job.

Fry and Kolb (1979) argued that there are four general types of demands in most jobs: Affective, perceptual, symbolic and behavioral. Affective job demand involves interpersonal skills to communicate, interact and influence others to achieve job-related goals with and through others. Perceptual job-demand involves the intellectual ability and analytical skills required to solve job-related technical problems. Symbolic job-demand refers to the application of technical skills. Behavioral job-demand refers to the physical effort required to ensure that tasks are completed.

There is evidence that job-demand for learning is an antecedent of job-related learning, particularly informal learning. According to the Developmental Challenge Profile (McCauley et al., 1994), three features of jobs foster learning: Job transitions, task-related characteristics, and obstacles. Job transitions refer to changes in a job that result from vertical or lateral movement in the organization such as a change in work role, a change in job content, or a change in location. Task-related characteristics include implementing change (e.g., initiating new projects or fixing operational problems), level of responsibility (i.e., higher levels of responsibility tend to be characteristic of learning situations), and non-authority relationships (i.e., influencing others without the use of formal authority is a learning opportunity). Obstacles (e.g., a difficult boss or unsupportive colleagues) facilitate learning in that they force the job incumbent to reduce the discomfort caused by the obstacles (McCauley et al., 1994).

It is arguable that the amount of job-related learning depends on the demands faced in the job. Individuals are compelled to learn if they occupy challenging jobs (Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004). Job-demand for learning is an external factor that stimulates job-related learning (Boyatzis, 1982) as it compels the employee to adapt to the requirements of the job. Furthermore, job-demand for learning stimulates learning because it provides both an opportunity and the motivation to learn (McCauley et al., 1994). Job-demand for learning is expected to increase job-related learning because it catalyzes efforts to minimize the gap between current, but inadequate, competencies and the competencies required to perform the job effectively. Based on the preceding discussion, the following hypothesis is proposed:

H1: Job-demand for learning will correlate positively to job-related learning.

Need for Achievement

The notion that people possess a relatively stable disposition toward engaging in achievement-oriented activities has existed since at least the 1930s. Murray (1938) proposed that personality consist of 44 variables, one of which he named the need to achieve. McClelland (1985) argued that the need for achievement is one of three basic socially acquired needs.

The need for achievement is particularly pertinent to job-related learning, because the need for achievement is an unconscious motive that drives individuals to perform well or to improve their performance (McClelland, 1985). Many studies (e.g., Hollenbeck, Williams, & Klein, 1989, Slocum, Cron, & Brown, 2002) have found a strong positive correlation between need for achievement and goal attainment. Furthermore, the need for achievement is relatively stable and subsequently is part of an individual's personality (McClelland, 1985).

Numerous factors affect the development of need for achievement: Birth order of siblings (Lindgren, Moritsch, Thulin, & Mitch, 1976); intactness of the home (McClelland, 1961); social class (Rosen, 1962); parents' educational level, especially the father's (McClelland, 1985); and the early experience of success at tasks (Argyle & Robinson, 1962). Furthermore, the need for achievement is a function of expectations, which are based on personal standards of excellence. One's performance is compared to one's expectations such that meeting or exceeding these expectations produces positive affect whereas not meeting these expectations produces negative affect (McClelland, 1985).

Individuals with a high need for achievement have a propensity to demonstrate their ability in overcoming difficult tasks whilst maintaining consistently high standards (McClelland & Watson, 1973; Slocum et al., 2002). Such individuals consistently seek feedback on their performance in order to learn from their mistakes and prefer quantitative feedback (Boyatzis & Kolb, 1995). One reason why individuals with a high need for achievement seek objective feedback is that their motivation is intrinsic more so than extrinsic and therefore they prefer objective appraisal rather than approval or acceptance based on the subjective appraisals of others (Boyatzis & Kolb, 1995).

When an individual occupies a job that demands the acquisition of new skills and knowledge, job-related learning should occur. In other words, as stated previously, job-demand for learning should stimulate job-related learning. Need for achievement arguably moderates the relationship between job-demand for learning and job-related learning. Specifically, high need for achievement will be more likely than low need for achievement to stimulate the learning of job-related skills and knowledge because high need for achievement is more likely to drive one to meet the job-related challenges. This argument is supported by research showing that need for achievement is correlated positively to confidence, ambition (Soyer, Rovenpor, & Kopelman, 1999), a genuine appetite for success (Schroth & McCormack, 2000), working hard, competitiveness (with self and others), and intrinsic motivation to master tasks (Spence & Helmreich, 1983).

Meeting work-related objectives is facilitated by performing the job better through experiential learning by improving one's skills and knowledge (Bierly et al., 2000; Kolb, 1984), developing psychological maturity (Boydell, 1990), or even imitating others (social and vicarious learning) (Bandura, 1977). Furthermore, individuals with a propensity to increase their competencies when faced with complex problems tend to engage in learning activities (Coad & Berry, 1998). This tendency increases the chances of individuals with high need for achievement to adopt problem-based learning and action learning (Baud & Feletti, 1991; Revans, 1982). In contrast to individuals with a low need for achievement, individuals with a high need for achievement should be more likely to assume responsibility for their own job-related learning when faced with a job that demands learning. From the discussion above, the following hypothesis is proposed:

H2: Need for achievement will moderate the effect of job-demand for learning on job-related learning. Specifically, the correlation between job-demand for learning and job-related

learning will be stronger amongst individuals with a high need for achievement than amongst individuals with a low need for achievement.

Method

Participants

The average age of the participants was 30.8 years (s.d. = 7.4 years) and 44 per cent were male. The average number of years that the participants had worked in their current organizations was 4.4 years (s.d. = 5.3) and they had been in their current jobs on average for 2.6 years (s.d. = 3.3 years). Three per cent of the participants were executives, eleven per cent were senior managers, eight per cent were middle managers, 49 per cent were lower-level managers, and 30 per cent were non-managers. Concerning highest level of education, 12 per cent of the participants had completed high school, 33 per cent had completed a diploma, and the remaining 55 per cent had completed either a bachelor degree or a post-graduate degree (i.e., masters or doctorate). The participants were from 30 professions across 21 industries. The top four professions that contributed to this study are administration (18.3%), lecturers (10.5%), marketing (8.5%) and production (8.5%). The top four industries that contributed to this study were education (24.8%), investment holding (9.2%), agriculture supplies manufacturing (7.2%) and chemical manufacturing (6.5%).

Measures

The scales for job-demand for learning and job-related learning were developed for this research, whilst the scale for need for achievement was obtained from the International Personality Item Pool (2001). The Appendix presents the items used for the three scales. Three items were used to measure job-demand for learning. These items address the dynamic nature of a job in terms of changes to tasks, responsibilities, duties, and roles. In sum, the job-demand for learning scales attempts to measure the pace and intensity of change in a job. Three items were used to measure job-related learning. The phrase “in the last six months” was included at the start of each item to ensure that the participants’ response to the variable reflected the recent learning of job-related skills and knowledge. Need for achievement was measured using a scale from the International Personality Item Pool (2001). A five-point Likert scale (i.e., 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree) was used with all three scales.

Procedure

The questionnaires were distributed as package with an information sheet with brief details of the research. The package was given to the human resources manager in each of the selected organizations. A pre-paid return envelop was enclosed to enable participants to conveniently complete the questionnaire at a time and place of their choice and to post the completed questionnaires directly to the researchers. This data collection method assured the participants anonymity.

Results

A principal component analysis was used to examine the structure of the overall measurement model. This analysis involved using a Varimax rotation with a three-component

extraction as the questionnaire contained items for three constructs: i) job-demand for learning; ii) need for achievement; and iii) job-related learning. The cut-off value for item loadings depends upon sample size. Hair, Anderson, Tatham and Black (1998) recommended a cut-off value of .45 for a sample size of 150. Additionally, Hair et al. (1998) recommended increasing the cut-off value as the number of items increases. Based on these recommendations, a cut-off value of .50 was used for the overall principal component analysis loadings. The final principal component analysis yielded a three-component Varimax solution comprising three items for job-demand for learning, five items for need for achievement, and three items for job-related learning.

Table 1 contains the findings from the principal component analysis and shows that all of the items for job-related learning load on the first component, all of the items for need for achievement load on the second component, and all of the items for job-demand for learning load on the third component. Overall scores for each of these three constructs were obtained by averaging the scores of their respective items.

Insert Table 1 about here

All of the data were obtained from a single source (i.e., employees) at a single point in time using a single method. The covariance between the constructs may therefore be influenced by single-source and common-method biases. A single-component test was conducted on all of the items shown in Table 1, and in the Appendix, to examine whether common source/method variance explained the majority of the covariance between the items. The results from this analysis revealed that the first component accounted for 22.8 per cent of the total variance in the items thereby indicating that common source/method variance does not explain the majority of the variance in the items.

The means, standard deviations, correlations, and internal reliabilities for the measured variables are presented in Table 2. As shown in Table 2, job-demand for learning has a significant negative correlation with gender (males reported higher levels of job-demand for learning) and a significant positive correlation with organizational level. Job-related learning has significant negative correlations with age, education, organizational tenure, job tenure, and organizational level as well as a significant positive correlation with gender; females reported higher levels of job-related learning.

Insert Table 2 about here

The effects of age, gender, profession, educational level, organizational tenure, job tenure, organizational level, and industry on job-related learning were controlled by using standardized residual scores obtained by regressing job-related learning on the demographic variables. As shown in Table 2, job-demand for learning has a significant positive correlation with job-related learning ($r = .20, p < .01$). Furthermore, job-demand for learning has a stronger positive correlation with the demographically controlled job-related learning ($r = .28, p < .001$). Moreover, when controlling for the effects of the eight demographic variables on both job-demand for learning and job-related learning, the correlation between job-demand for learning and job-related learning is .29 ($p < .001$). All three of these findings support Hypothesis 1.

The independent variable (i.e., job-demand for learning) and the moderator variable (i.e., need for achievement) were standardized and the product-term was calculated using the standardized

scores in order to reduce multicollinearity between the product-term and its constituents (Aiken & West, 1991). A hierarchical regression analysis revealed that need for achievement moderated the relationship between job-demand for learning and job-related learning: For the product-term, $b = 0.16$, $p < .05$, $\Delta R^2 = .03$. A median split on need for achievement scores was used to examine the moderation effect. The “Low” need for achievement group comprised 97 participants whilst the “High” group comprised 56 participants

Job-related learning, for which the effects of the demographic variables were controlled, was regressed on job-demand for learning separately for the Low need for achievement group and for the High need for achievement group. The findings from these two univariate regression analyses were as follows: i) for the Low group, $b = 0.17$, $\beta = .20$, $t = 1.99$, $p = .025$; and ii) for the High group, $b = 0.49$, $\beta = .45$, $t = 3.7$, $p < .001$. These findings indicate that although job-demand for learning is a significant positive predictor of job-related learning in both groups, job-demand for learning is a stronger predictor of job-related learning with the High group. In other words, although the correlation between job-demand for learning and job-related learning is positive and significant in both groups, the correlation is stronger amongst individuals who have a high need for achievement than amongst individuals who have a low need for achievement. The hypothesis that the effects of job-demand for learning on job-related learning will increase with increasing levels of need for achievement is therefore supported.

Discussion

The hypothesis that job-demand for learning would be correlated positively to job-related learning was supported. Additionally, the hypothesis that need for achievement would moderate the effect of job-demand for learning on job-related learning was supported. More precisely, the positive correlation between job-demand for learning and job-related learning was greater amongst individuals with high need for achievement than amongst individuals with low need for achievement.

Job-demand for learning is caused by changes in requisite knowledge, roles, responsibilities or functions due to macro factors such as technological and market changes as well as to micro factors such as organizational restructuring or changes in organizational processes. That job-demand for learning stimulates job-related learning is hardly surprising given that the job incumbent must acquire job-related knowledge and skills to perform the job effectively.

Need for achievement moderates the effect of job-demand for learning on job-related learning because with increasing levels of need for achievement there is an increase in the tendency to assume responsibility for one’s own job-related learning. A consequence of this sense of ownership regarding one’s job-related learning is a proclivity to adopt problem-based learning and action learning (Baud & Feletti, 1991; Revans, 1982). These two types of learning are proactive and pragmatic and are particularly effective for dealing with demands to acquire job-related knowledge and skills.

Limitations and directions for future research

Future research is needed to reveal other moderators of the relationship between job-demand for learning and job-related learning because only one moderator variable (i.e., need for achievement) was considered in this study. Arguably, other variables (e.g., organizational support for learning) also moderate the relationship between job-demand for learning and job-

related learning. The use of a cross-sectional design in this study prohibits inferences being drawn regarding the causal relationships between job-demand for learning, need for achievement and job-related learning. Future research might employ a longitudinal design in order to facilitate the drawing of causal inferences. For example, a study might be designed such that job-demand for learning and need for achievement are measured first and job-related learning is measured some time (e.g., three months) later.

All of the data collected were obtained from a single source using a common method (i.e., a Likert-scale questionnaire). Mono-source and common-method biases can increase both measurement error and/or the correlations amongst the variables. Although it is difficult to prove such biases were not influential, the principal component analysis and the moderation analysis indicate that mono-source and common-method biases were not highly influential. Future research could avoid such issues by obtaining data for job-demand for learning and job-related learning from parties, other than the job incumbent, who are familiar with the job and the incumbent's job-related knowledge. Nevertheless, such data are difficult to obtain and their validity is questionable.

Practical and theoretical implications of the findings

Keeping pace with job-demand for learning is crucial as failure to acquire the knowledge and skills required to perform a job effectively can result in either stagnation or demotion of personnel (Marsick, 1988). Additionally, failure to acquire the knowledge and skills required to perform a job effectively can result in other unfavorable consequences such as frustration and burnout. There are also consequences for the organization because employees who do not update their job-related knowledge and skills adversely affect not only their own performance but also that of the organization. Furthermore, the ability to learn effectively is a catalyst for creativity and innovation. Innovative behavior is critical for organizations as it can improve or create new products, improve production for quality, and reorganize commercial organization for enhanced effectiveness (Hansemark, 1998).

Learning style is a factor that arguably would have a strong influence on job-related learning because learning style can significantly facilitate or impede learning (Vincent and Ross, 2001). Organizations need to consider ways to enhance the ability of their leaders to coach, mentor, teach or facilitate job-related learning amongst employees. According to DeCharms (1972), realistic and moderate goals that have been determined intrinsically are a critical first step for establishing achievement as a source of motivation. There is evidence (i.e., Hansemark, 1998) that need for achievement can be increased by allowing employees to establish their own learning and performance goals rather than by imposing such goals on them. It thus appears that one way in which job-related learning can be facilitated is by increasing the need for achievement.

The redesign of jobs to create challenges for employees and thus encourage job-related learning is an important practical consideration. Although formal training should be provided as it can address areas (e.g., learning a new software programme) that may be beyond, at least in the first instance, the scope of individuals to learn informally, individuals should be encouraged to take the initiative to learn as it adds challenge and variety to work thereby making the job more interesting and satisfying. Indeed, organizations should not focus too much on training but rather should emphasize learning. Adults need to be responsible for their own learning and should be encouraged to adopt a life-long learning attitude whereby they seek opportunities to facilitate

their personal and work-related development. Human resource initiatives can supplement this approach by allowing employees to have a significant role in the determination of their training programmes and career paths.

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APPENDIX

Measures

Job-demand for learning (JDL)

JDL1: My job is very dynamic, changing rapidly (e.g., technical, roles, duties).

JDL2: My job is getting increasingly complex, due to a rising number of tasks and responsibilities.

JDL3: My job is changing all the time.

Need for Achievement (NAch)

NAch1: I work hard.

NAch2: I continue working until everything is perfect.

NAch3: I excel in what I do.

NAch4: I plunge into tasks with all my heart.

NAch5: I am not one of those people who do just enough work to get by.

Job-related learning (JRL)

JRL1: In the last six months, I have learnt a lot of things that have helped me to perform my job better.

JRL2: In the last six months, I have acquired a lot of new job-related knowledge.

JRL3: In the last six months, I have acquired a lot of new job-related skills

Table 1. Principal components analysis results^a for job-demand for learning, need for achievement, and job-related learning

Scale	Items	Principal Components		
		1	2	3
JDL	JDL1			.79
	JDL2			.60
	JDL3			.82
NAch	NAch1		.57	
	NAch2		.61	
	NAch3		.69	
	NAch4		.54	
	NAch5		.59	
JRL	JRL1	.84		
	JRL2	.90		
	JRL3	.85		

^a Loadings > .50 shown.

JRL = job-related learning, NAch = need for achievement, JDL = job-demand for learning

Table 2. Means, standard deviation (s.d.), and correlations^a for the measured variables

	Mean (s.d.)	1	2	3	4	5	6	7	8	9	10
1. Age	30.8 (7.4)										
2. Gender	— —	-.11									
3. Education	— —	-.07	-.13								
4. Org. tenure	4.4 (5.3)	.72	.02	-.26							
5. Job tenure	2.6 (3.3)	.45	-.05	-.05	.62						
6. Org. level	— —	.37	-.29	.32	.29	.21					
7. Profession	— —	.05	-.08	.04	.03	.05	.08				
8. Industry	— —	.12	.04	-.03	.11	.16	-.20	-.02			
9. Job-demand for learning	3.4 (0.7)	-.02	-.16	.11	-.03	.02	.19	.06	-.01		
10. Need for achievement	3.5 (0.4)	.02	.10	-.02	.02	.07	.07	.08	.04	.06	
11. Job-related learning	2.9 (0.5)	-.14	.29	-.11	-.15	-.17	-.19	-.01	.00	.20	.03

^a $r > .13, p < .05$; $r > .18, p < .01$.