Continuous Learning and Employee Learning Processes: The Case of New Zealand Small Manufacturing Firms

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ABSTRACT

This study examines whether managers in small manufacturing firms foster continuous employee learning. To accomplish this aim we investigate differences between the ways novices and experienced specialists perceive their workplaces as learning environments. We also examine differences between the learning processes of these two groups of employees. The study’s research questions are explored by applying discriminant analysis to survey data collected from 464 employees in 31 firms. We found that novices and experienced specialists do differ significantly in their perceptions of (1) work environment conditions that either help or hinder learning, (2) supervisors’ proximate support for learning, and (3) satisfaction with workplace learning. They also differ significantly in terms of the sources and methods of learning that they use.

Key Words: Continuous learning, Employee learning, Discriminant analysis, New Zealand

There is growing interest in making workplaces into effective learning environments (Billett, 2001; Eraut, 2004). The importance of learning is primarily because of the need for organisations to respond to rapid and continuous change in the organisation's external environment (Ellinger et al., 1999). To meet the challenge of perpetual change that faces many contemporary organisations employees must engage in continuous learning (Johnson, 2002; London, 1996). If employees do not engage in continuous learning, their knowledge and skills quickly become obsolete. The importance of continuous learning by employees is becoming widely recognised as critical to organisational effectiveness (Hill, 2004; Maurer, 2002; Tannenbaum, 1997). For instance, the views that learning is important to the survival of organisations (Schein, 1993), and is a significant source of competitive advantage (De Geus, 1988), are prevalent in the workplace learning, organisational learning, and ‘learning organisation’ literatures.

The growing awareness of the need to foster learning at and through work has far-reaching consequences for managers, who are expected to manage the workplace as a place fit for learning. The literatures that focus on workplace learning, organisational learning, and the learning organisation encourage managers to move away from a directing role and towards that of coach and facilitator, and thus take on increasing responsibility for supporting the learning of their staff (Ellinger et al., 1999; Hughes, 2004; Lang & Wittig-Berman, 2000; Sambrook & Stewart, 2000). In fact, Boud and Garrick
(1999) assert that, there is no place for managers who do not appreciate their own vital role in fostering learning (p. 1).

Small business researchers (Field, 1998; Gibb, 1997; R. Hill & Stewart, 2000; Johnson, 2002; Kerr & McDougall, 1999) all emphasise the importance of learning for small business in order to ensure success in the long term. They also agree that formal training is generally not suited to small businesses for a variety of reasons (Marlow, 1998). Instead, informal training practices and informal learning processes are preferred (Billett et al., 2003). There is growing awareness that the role and importance of such informal training practices and informal learning processes in small firms needs to be recognised and appreciated (Field, 1998; Kitching & Blackburn, 2002).

Recent thinking on training in smaller firms suggests that informal training practices and informal learning processes fits well with constraints under which small firms operate, and may be effective in improving firm performance (Curran, 2000; Field, 1998; Rowden, 1995; Walton, 1999). Hence, the traditional view that only formal training is ‘real’ training is increasingly being questioned. Given the importance of learning for the competitive performance of small businesses, and the strong preference towards informal training practices and informal learning processes in this sector, the actions managers in small businesses do take to support and encourage continuous learning are thus matters of major interest.

**Aims and Study Context**

The main aim of this paper is to examine whether or not managers in small firms foster continuous learning. Therefore, this paper reports results for novices (employees in the 18-24 age category) and experienced specialists (employees in the 35-44 age category) of survey research examining: (1) employee perceptions of the extent to which managers in small manufacturing firms create conditions in work environments favourable to learning and enact behaviours in one-on-one settings that are likely to foster employee learning; and (2) employee (dis)satisfaction with informal workplace learning. We adopted the terms ‘novice’ and ‘experienced specialist’ and modified their descriptions
from the taxonomy of employee development presented in a review of literature by Jacobs and Washington (2003, p.351).

For this study, a manufacturing firm is defined as small if it has 10-49 full time equivalent (FTE) employees. This size category matches the European Union definition of the small firm (Curran & Blackburn, 2001). Adopting the European Union definition should promote comparability with other studies. The choice of the manufacturing sector for this study was influenced by its importance to the New Zealand economy, and the prevalence of larger-size firms within this sector, compared to other sectors (Statistics New Zealand, 2003). Larger-size firms are likely to have a recognisable management structure, and therefore demonstrate the phenomenon of interest to the researchers.

Data were gathered from employees in mostly small batch manufacturing firms that produce products designed to customer specifications, such as special-order machine tools, custom clothing, and printing. It could reasonably be assumed that workplace learning is particularly important in such firms. Small batch manufacturing is close to traditional skilled-craft work, because people are a large part of the production process (Daft, 2000). Furthermore, employees are likely to often encounter novel work problems when products are made to customer specifications. Apart from the need to solve novel work problems, other situations that prompted learning in these firms included the arrival of newcomers and their needs’ to be socialised and trained, the need to comply with health and safety requirements, and continuous improvement efforts.

**RESEARCH CONCEPTUAL FRAMEWORK**

An adaptation of Lewin’s (1951) B-P-E model served as the research conceptual framework for the study. The B-P-E model postulates a relationship among three major components of learning/facilitating interactions where Behaviour (B) is a function of the interaction between Person (the learner, P) and Environment (E):

\[ B = f(P, E) \]
This relationship has been reiterated and extended by several authors (Bandura, 1977; Hunt & Sullivan, 1974; Kidd, 1973; Knowles, 1990; Mackeracher, 1996). Furthermore, according to Davis and Luthans (1980), the B-P-E model has been widely adopted by the organisational behaviour field as a theoretical framework to explain behaviour. When we apply the B-P-E model to the learning/facilitating context, the P stands for Person (the learner): and can include any characteristic of a learner (for example, motivation, self-efficacy, and attitudes) that affects learning. The B stands for Behaviour, and can include any outcome (for example, the knowledge, skills and attitudes that are learned, and how the learner responds to the learning process) that occurs during, or after the learning/facilitating interaction. The E stands for Environment, and can include any factor within the learning situation or context which might effect or affect learning, including, for example, learning interventions, quality of the physical environment, social support, and learning potential of the work system. The facilitator can be thought of as a very influential component of the learning environment, through the provision of guidance, information, feedback, reinforcement, and support (Mackeracher, 1996).

Managers play a key role in creating conditions in work environments that are favourable for an integration of learning and work (Noe & Wilk, 1993; Tannebaum, 1997). In particular, the employee’s immediate supervisor is a potentially influential component of the learning environment, because supervisors have a responsibility to foster the learning of staff (Hughes, 2004). Supervisors foster employee learning through engaging in a range of employee development interventions that include providing feedback and coaching, delegating challenging work assignments, and reinforcing learning (Ellinger & Bostrom, 1999; Minter & Thomas, 2000). Apart from learning experiences through development interventions by supervisors, employees are known to also learn from a variety of other sources, and use other methods of learning (Billett, 2001; Gerber, 1998). In this study it was expected that employees’ perceptions of the relative contribution of each learning source and method of learning to the development of their knowledge and skills would provide insight into the potential differing learning processes of the two groups (novices/experienced specialists). It was also
anticipated that employees’ workplace learning experiences would lead to feelings of (dis)satisfaction with learning (Kirkpatrick, 1998).

The effects of managers on learning of the two groups of employees were studied within the boundaries furnished by this conceptual framework. Specifically, this included an investigation of:

- conditions in the work environments;
- employee development interventions used by workplace supervisors;
- sources and methods of employees’ learning; and
- outcomes associated with employees’ learning experiences.

This study was guided by three research questions:

1. Do novices and experienced specialists differ in perceptions of their workplaces as learning environments?
2. Do novices and experienced specialists differ in terms of the sources and methods of learning that they use?
3. On what variables are novices and experienced specialists most different?

**METHODOLOGY**

**Questionnaire Development**

A questionnaire was developed based on: (1) the findings of an exploratory qualitative study; (2) relevant theory and research; and (3) questionnaires used in other studies. An abbreviated version of the questionnaire items is contained in Table 1.

[Insert Table 1 here]

The questionnaire was divided into five sections (A, B, C, and D). In sections A, B and C, positively (and a few negatively) stated propositions and a seven-point scale (7 = strongly agree, 1 = strongly disagree) were used to measure employee perceptions of work environment characteristics, immediate workplace supervisors’ proximate support for learning, and (dis)satisfaction with learning, respectively. Negatively worded items were reverse coded.

In section D, questionnaire items measured the employees’ perceptions of the usefulness of seven ‘aids to learning’. These ‘aids to learning’ consisted of three sources of learning (immediate supervisor; other managers; and workmates) and four methods of learning (everyday work activities;
on-the-job training; observing and listening; and trial and error) Responses were recorded on a five-point scale (5 = extremely useful, 1 = not at all useful)

**Sampling and Data Collection**

To recruit participants, lists containing contact (and other) details of small manufacturing firms were purchased from a commercial database supplier. These lists were used as the sampling frame, and a random sampling procedure was used to select the participating firms (Zikmund, 2000) The owner-managers of 31 firms agreed to allow their staff to participate in the study. Within these firms, all employees in the operating cores were invited to complete the questionnaire and there were 464 useful employee responses.

Three methods of survey implementation were used: (1) on-site group administration; (2) the drop-off-and-collect method; and (3) the postal system. Using these three methods, 464 useable questionnaires were received from employees in the participating firms. Of this total, 76 respondents were in the 18-24 category (novices) and 142 were in the 35-44 category (experienced specialists) The data analysis in this paper is restricted to these two groups of employees.

Discriminant analysis was used to determine whether novices and experienced specialists were distinctly different in terms of perceptions of their workplaces as learning environments (RQ1) and in terms of learning processes (RQ2) It also facilitated the investigation of differences among the two groups with respect to the discriminating variables (RQ3) The results of the data analysis are discussed in the next section.

**RESULTS**

Discriminant analysis was conducted to identify the variables that contribute most to the discrimination between the two groups. Of the 218 in both groups, 35 percent were novices (18 to 24 years age group) and 65 percent were experienced specialists (35 to 44 years age group) Thirty-one independent variables pertaining to learning opportunities, organisational support for learning, supervisors proximate support for learning, satisfaction with workplace learning, and sources and
methods of learning were used to conduct two-group discriminant analysis. Thus, what discriminates the groups is of major importance in this analysis. Discriminant analysis is also useful to assess whether group membership can be predicted from the set of predictor measures.

Are the Groups Different?

As a first step it was necessary to establish statistically whether novices and experienced specialists are different. Results of the Box’s M test of equality of covariance matrices indicated that Box’s M is significant (p = .000) Therefore the groups do differ in their covariance matrices and the groups are distinct and different. Because there are two groups, only one discriminant function is estimated which accounts for 100 percent of the variance explained. The canonical correlation associated with this function is 0.497. The square of this correlation is .247, which indicates that 24.7 percent of the variance in the dependent variable groups of workers is explained by the discriminant analysis model.

The next step in the analysis was to determine the significance of the discriminant function which is assessed by Wilks Lambda. The overall Wilks Lambda = 0.753, which transforms to a chi-square value of 41.685 and p = .026. The discriminant function is significant at an alpha level of .05 (p < .05) This indicates that the discriminant function discriminates between the two groups very well and there are significant differences across the predictor variables.

The classification table indicated that 72 percent of cases were correctly classified which implies that discriminant analysis was able to predict correct group membership for 72 percent of the cases. This satisfies the classification accuracy criterion suggested by Hair et al (1998) that the classification accuracy should be at least 25 percent greater than that achieved by chance. In our study the chance accuracy is 34.6 percent for novices, whereas the prediction was higher at 43.4 percent; and the chance accuracy is 65.4 percent for the experienced specialists, whereas the prediction was higher at 87.3 percent. The results demonstrate that the discriminant function was fairly accurate in predicting group membership.
On What Variables Are They Most Different?

We then proceeded to identify the individual variables that contribute most to the discrimination between the two groups. The structure matrix shows that 14 of the original 31 variables have higher loadings on the discriminant function than others. The results of the univariate $F$ ratios shown in Table 2 further confirm that these fourteen variables are significant in differentiating the two groups. These variables are therefore expected to maximally predict differences between the two groups.

[Insert Table 2 here]

These, fourteen variables were identified as having the highest discriminatory power in truly distinguishing between the novices and experienced specialists. The high percentage (72 percent) of cases correctly classified by the discriminating function also confirms that these fourteen variables are good discriminators of the two groups.

These 14 variables in Table 2 can be grouped according to their respective categories and it is clear that:

- 2 of the 9 Organisational support for learning variables (A8 and A9) contribute to the discrimination between the two groups.
- 5 of the 7 Supervisory support variables (B1, B7, B3, B6 and B4) contribute to the discrimination between the two groups;
- 2 of the 4 Satisfaction with learning variables (C2 and C4) contribute to the discrimination between the two groups;
- 2 of the 3 Sources of learning variables (D3 and D1) contribute to the discrimination between the two groups;
- 3 of the 4 Methods of learning variables (D4, D5 and D7) contribute to the discrimination between the two groups.
- None of the 4 learning opportunities variables (A1 to A4) contribute to the discrimination between the two groups.

DISCUSSION

The results of our analysis clearly indicate that novices and experienced specialists do differ significantly in their perceptions of their workplaces as learning environments. In regard to conditions in the work environments (A1-A13): the means (see Table 1) on the items suggest that, on the whole, novices ($\bar{x}_N$) viewed both learning opportunities and organisational support for learning
more favourably than experienced specialists (\(\bar{x}_{ES}\)) did. Novices and experienced specialists were most different in their perceptions on variables A8 (people take time to figure out ways to improve: \(\bar{x}_N = 5.59; \bar{x}_{ES} = 5.15\)) and A9 (people feel encouraged to experiment to learn new ways of doing things: \(\bar{x}_N = 5.09; \bar{x}_{ES} = 4.54\)) As mentioned previously, these two variables are indicators of conditions necessary for more innovative forms of learning (Ellstrom, 2001). This finding suggests that, from the perspective of the experienced specialists, managers in the sample firms are failing to create some important conditions favourable to innovative learning.

Patterns in the means suggest that novices viewed their workplace supervisors’ proximate support for learning (B1 – B7) more favourably than experienced specialists did. Novices and experienced specialists were most different in their perceptions on five of the seven variables. These variables were: B1 (discusses my performance: \(\bar{x}_N = 5.11; \bar{x}_{ES} = 4.41\)); B3 (provides constructive feedback: \(\bar{x}_N = 5.05; \bar{x}_{ES} = 4.60\)); B4 (is available to talk about problems: \(\bar{x}_N = 5.78; \bar{x}_{ES} = 5.56\)); B6 (provides on the job training: \(\bar{x}_N = 5.44; \bar{x}_{ES} = 4.99\)); and B7 (arranges help from others: \(\bar{x}_N = 5.62; \bar{x}_{ES} = 5.14\))

The findings in regard to B1 and B3 suggest that experienced specialists may be deprived of supervisory feedback. The general value and importance of receiving feedback as a means of directing and reinforcing behaviour is well-known (Larson, 1984, 1986). Feedback should aid self-management, because feedback keeps employees’ work-related activities directed toward desired personal and organisational goals (Locke & Latham, 1990). It is also thought to enhance the individual’s self-awareness (Herold & Greller, 1997), and help a person adjust self-perceptions, self-ratings, and behaviours (Atwater & Yammarino, 1997).

The findings in regard to B4, B6, and B7 suggest that workplace supervisors were perceived by experienced specialists as providing only low levels of proximate support for learning. Thus, there seems to be inconsistency between management practice in the small firms studied, and what the literature prescribes. To illustrate, several commentators argue that the manager’s employee development role goes well beyond merely enabling staff to perform their jobs effectively and
efficiently. For instance, Harrison (1992) contends that staff should be able to enjoy continuous learning opportunities through which their abilities and potential can be developed. Similarly, Davenport (1999) views employees as investors of their own human capital. He argues that managers must ensure that employees get a return on their investment through provision of opportunities to gain skills and knowledge. Davenport considers knowledge transfer a critical manager competency, and believes that managers must be able to teach directly through contact with employees and indirectly by creating formal and informal learning opportunities (1999, p.42). In this study, it appears that in the opinion of the experienced specialists, workplace supervisors may be neglecting their employee development role.

As could be expected, novices generally reported greater satisfaction with their learning experiences than experienced specialists did. Two satisfaction variables were particularly important in discriminating between the two groups of employees. These variables were: C2 (satisfied with my personal development since joining this organisation: $\bar{x}_N = 5.81; \bar{x}_{ES} = 5.29$); and C4 (this organisation has helped me to grow and develop: $\bar{x}_N = 5.45; \bar{x}_{ES} = 5.11$). These findings, together with the findings in regard to A8 and A9, are suggestive that managers in the sample firms may have a rather limited view on learning. It seems that they view learning as the acquisition of job-specific knowledge and skills, and other types of learning, such as the learning associated with personal development (C2, C4) and workplace innovation (A8, A9) are neither recognised nor encouraged by managers.

Our analysis suggests that novices and experienced specialists do differ significantly in terms of the sources and methods of learning that they use. In regard to social sources of learning, two variables were particularly important in discriminating between the two groups. These variables were D1 (my immediate supervisor is a useful source of learning: $\bar{x}_N = 3.87; \bar{x}_{ES} = 3.56$) and D3 (my workmates are a useful source of learning: $\bar{x}_N = 4.20; \bar{x}_{ES} = 3.61$). This suggests that novices relied on close guidance from workplace models to a greater extent than experienced specialists did. A possible explanation for these findings is that the novices were more likely to be new to the workforce.
Therefore, they probably received high levels of learning support because they would have to learn about, and adjust to, the organisation’s culture and simultaneously learn job specific skills.

Three variables were especially important in discriminating between the two groups in regard to the usefulness of various methods of learning. These variables were: D4 (everyday work activities: $\bar{x}_N = 3.83$; $\bar{x}_{ES} = 3.66$); D5 (on-the-job training: $\bar{x}_N = 3.83$; $\bar{x}_{ES} = 3.66$); and D7 (trial and error: $\bar{x}_N = 3.75$; $\bar{x}_{ES} = 3.49$) These findings are not surprising, since novices would, in all probability, find their everyday work activities more challenging than experienced specialists would. Thus, it is understandable that everyday work activities would have greater learning potential for novices. Furthermore, it would be reasonable to assume that novices are more likely to engage in learning through trial-and-error processes. As regards on-the-job training, experienced specialists are more likely to be the providers of such training, as opposed to the recipients.

**IMPLICATIONS**

The results have implications for both researching and managing employee learning in smaller firms. Researchers studying employee learning in smaller firms should not assume that, within a particular firm, employee learning processes will be identical, or that employees will perceive work environment conditions and the workplace supervisors’ proximate support for learning similarly. Level of employee competence is clearly an important factor influencing both employee learning processes and employee perceptions of the workplace as a learning environment. It also appears that workplace supervisors and co-workers play a less important role in the learning of experienced specialists.

As regards management practice, results of the employee survey suggest that there is considerable scope for improvement in managing the workplaces as sites for continuous learning. Results from this study can be used to propose specific managerial actions that have the potential to foster the ongoing learning of experienced specialists in particular. First, managers should encourage them to engage in innovative learning. Engagement in such learning could lead to improvements in products, services, work processes and work practices. Second, managers should provide experienced
specialists with ongoing performance feedback and coaching. Third, managers should provide them with access to work-based personal development experiences. The development of generic skills, such communication and problem-solving skills, enhances the firm’s capacity to innovate and can also assist with the employability of staff. Finally, managers should encourage experienced specialists to utilise low cost learning resources that exist in the firm’s external environment, for example, the learning experiences provided by some trade associations and suppliers.

**CONCLUSION**

Managers in the sample firms do not seem to be fostering the continuous learning of all staff. When managers do enact their employee development role they seem to devote most of their attention and resources toward novices. In other words, employee learning appears to be concentrated in the early years of employment. Once novices become productive the emphasis on learning seems to diminish. This conclusion is based on the findings that, overall, experienced specialists assessed conditions in the work environments and the workplace supervisors’ proximate support for learning less favourably than the novices did. Additionally, the experienced specialists seemed relatively less satisfied with some aspects of their workplace learning experiences.

In conclusion, the findings of this study contributes to an understanding of differences in the learning processes of novices and experienced specialists in smaller firms, by casting light on who is involved in their learning and the ways in which they learn at work. The research found that novices were more reliant on particular sources and methods of learning. Novices seemed to be more reliant on workplace supervisors and co-workers as sources of learning. Similarly, novices seemed to be more reliant on learning through receiving on-the-job training and learning through the direct experiences of both the challenges of everyday goal-directed work activities and trial-and-error as methods of learning.
References


Table 1: Abbreviated Questionnaire Items and Group Means

<table>
<thead>
<tr>
<th>Items</th>
<th>Novices ($x_N$)</th>
<th>Experienced Specialists ($x_{ES}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work Environment Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Learning opportunities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1: opportunities to learn different tasks</td>
<td>5.54</td>
<td>5.61</td>
</tr>
<tr>
<td>A2: opportunities to take on challenging tasks</td>
<td>5.51</td>
<td>5.52</td>
</tr>
<tr>
<td>A3: opportunities to choose own methods</td>
<td>5.01</td>
<td>4.56</td>
</tr>
<tr>
<td>A4: opportunities to use abilities</td>
<td>5.53</td>
<td>5.48</td>
</tr>
<tr>
<td><strong>Organisational support for learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5: training is arranged for you</td>
<td>5.44</td>
<td>4.96</td>
</tr>
<tr>
<td>A6: no informal training available</td>
<td>5.14</td>
<td>4.99</td>
</tr>
<tr>
<td>A7: managers tolerate mistakes</td>
<td>5.54</td>
<td>5.37</td>
</tr>
<tr>
<td>A8: take time to figure out ways to improve</td>
<td>5.59</td>
<td>5.15</td>
</tr>
<tr>
<td>A9: feel encouraged to experiment</td>
<td>5.09</td>
<td>4.54</td>
</tr>
<tr>
<td>A10: ideas for change welcomed</td>
<td>4.80</td>
<td>4.67</td>
</tr>
<tr>
<td>A11: little encouragement to learn skills</td>
<td>4.75</td>
<td>4.83</td>
</tr>
<tr>
<td>A12: learning new skills rewarded</td>
<td>3.97</td>
<td>3.87</td>
</tr>
<tr>
<td>A13: managers share learning experiences</td>
<td>4.84</td>
<td>4.32</td>
</tr>
<tr>
<td><strong>Supervisors’ Proximate Support for Learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1: discusses my performance</td>
<td>5.11</td>
<td>4.41</td>
</tr>
<tr>
<td>B2: asks what I need to learn</td>
<td>4.80</td>
<td>4.33</td>
</tr>
<tr>
<td>B3: provides constructive feedback</td>
<td>5.05</td>
<td>4.60</td>
</tr>
<tr>
<td>B4: available to talk about problems</td>
<td>5.78</td>
<td>5.56</td>
</tr>
<tr>
<td>B5: works with me to solve problems</td>
<td>5.48</td>
<td>5.26</td>
</tr>
<tr>
<td>B6: provides on the job training</td>
<td>5.44</td>
<td>4.99</td>
</tr>
<tr>
<td>B7: arranges help from others</td>
<td>5.62</td>
<td>5.14</td>
</tr>
<tr>
<td><strong>(Dis)Satisfaction with Learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1: satisfied with what I have learned</td>
<td>5.71</td>
<td>5.37</td>
</tr>
<tr>
<td>C2: satisfied with personal development</td>
<td>5.81</td>
<td>5.29</td>
</tr>
<tr>
<td>C3: my training didn’t cover basics</td>
<td>5.20</td>
<td>4.82</td>
</tr>
<tr>
<td>C4: organisation has helped me develop</td>
<td>5.45</td>
<td>5.11</td>
</tr>
<tr>
<td>*<em>‘Aids’ to Learning</em>”</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sources of learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1: my immediate supervisor</td>
<td>3.87</td>
<td>3.56</td>
</tr>
<tr>
<td>D2: other managers in my organisation</td>
<td>3.19</td>
<td>3.21</td>
</tr>
<tr>
<td>D3: my workmates</td>
<td>4.20</td>
<td>3.61</td>
</tr>
<tr>
<td><strong>Methods of learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D4: everyday work activities</td>
<td>3.83</td>
<td>3.66</td>
</tr>
<tr>
<td>D5: on-the-job training</td>
<td>3.82</td>
<td>3.35</td>
</tr>
<tr>
<td>D6: observing and listening</td>
<td>4.05</td>
<td>3.99</td>
</tr>
<tr>
<td>D7: trial and error</td>
<td>3.75</td>
<td>3.49</td>
</tr>
</tbody>
</table>

* Items in this section (D) were measured on a 5 point scale (1 = not at all useful; 5 = extremely useful) All the other items were measured on a 7 point Likert scale (1 = strongly disagree; 7 = strongly agree)
Table 2: Summary of the Discriminating Variables*

<table>
<thead>
<tr>
<th>Var. No.</th>
<th>Variable Description</th>
<th>Sig. Level</th>
<th>Wilks Lambda</th>
</tr>
</thead>
<tbody>
<tr>
<td>A8</td>
<td>In my workplace people take time to figure out ways to improve.</td>
<td>.036</td>
<td>.972</td>
</tr>
<tr>
<td>A9</td>
<td>In my workplace people feel encouraged to experiment to learn new ways of doing things.</td>
<td>.034</td>
<td>.972</td>
</tr>
<tr>
<td>B1</td>
<td>My immediate supervisor discusses my performance</td>
<td>.058</td>
<td>.977</td>
</tr>
<tr>
<td>B3</td>
<td>My immediate supervisor provides constructive feedback</td>
<td>.076</td>
<td>.980</td>
</tr>
<tr>
<td>B4</td>
<td>My immediate supervisor is available to talk about problems</td>
<td>.064</td>
<td>.978</td>
</tr>
<tr>
<td>B6</td>
<td>My immediate supervisor provides on the job training</td>
<td>.029</td>
<td>.970</td>
</tr>
<tr>
<td>B7</td>
<td>My immediate supervisor arranges help from others</td>
<td>.028</td>
<td>.968</td>
</tr>
<tr>
<td>C2</td>
<td>I am satisfied with my personal development since joining this organisation.</td>
<td>.050</td>
<td>.976</td>
</tr>
<tr>
<td>C4</td>
<td>This organisation has helped me to grow and develop.</td>
<td>.104</td>
<td>.983</td>
</tr>
<tr>
<td>D1</td>
<td>My immediate supervisor is a useful source of learning</td>
<td>.007</td>
<td>.956</td>
</tr>
<tr>
<td>D3</td>
<td>My workmates are a useful source of learning</td>
<td>.000</td>
<td>.897</td>
</tr>
<tr>
<td>D4</td>
<td>Everyday work activities are a useful method of developing work related knowledge and skills</td>
<td>.101</td>
<td>.983</td>
</tr>
<tr>
<td>D5</td>
<td>On the job training are a useful method of developing work related knowledge and skills</td>
<td>.010</td>
<td>.959</td>
</tr>
<tr>
<td>D7</td>
<td>Trial and error is a useful method of developing work related knowledge and skills</td>
<td>.038</td>
<td>.973</td>
</tr>
</tbody>
</table>

*Correctly classified 72.0%
Overall Wilks Lambda = 0.753, p<0.05