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Measuring the quality of managerial learning on the job

Lidewey van der Sluis
Roger Williams

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Lidewey van der Sluis

Roger Williams

Vrije Universiteit Amsterdam

Erasmus University Rotterdam

Department of Management and Organization
Faculty of Economics and Business Administration

Department of Marketing and Organization
Faculty of Economics

Free University

Erasmus University

De Boelelaan 1105

Burg. Oudlaan 50

NL-1081 HV Amsterdam

NL-3062 PA Rotterdam

The Netherlands

The Netherlands

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Abstract This article describes the development of an instrument to measure the quality of managerial learning on the job. The instrument can be used to analyse the quality of the individual learning process on the job. The literature shows that two factors determine the quality of the learning process; the learning potential of the job context and the way in which the manager approaches their work. So the instrument has two components. The first component measures the four types of work experience that offer potential opportunities for individual learning. These are Transitions, Task-related characteristics, Obstacles, and Support. The second component, the so-called learning behaviour, analyses, the way the individual approaches the potential learning opportunities present in the job. This can also be divided into four categories: Emergent learning, Planned learning, Instruction oriented learning, and Meaning oriented learning. Based on these two components, an instrument has been developed to measure the quality of learning on the job. This has been shown to be valid and reliable in a sample of European managers.

Keywords: Management learning; learning opportunities; learning behaviour; measurement

Introduction

Management development is a complex topic but most experts agree that it embodies two components, firstly “learning-off-the-job”, such as for example courses and MBA programmes, and secondly “learning-on-the-job”, that is the learning which comes from everyday work experience (Pauwe and Williams, 2001). This latter type of development has become the dominant topic in recent literature probably because continuous learning is seen to form a crucial part of the new employment relationships between employer and employee (Weick, 1996).

Although learning on the job has been seen as being of importance to managers’ development, it is still a relatively unexplored area. Clearly two variables are involved; the work situation and the individual but the extent to which each contribute to individual learning on the job is still unclear. The first step in solving this puzzle must be to develop valid and reliable measures in this area. Such measures can be used to

indicate possible developmental opportunities for any specific executive and thus can help both the individual concerned and their employer to manage their learning process (Minor and Mezias, 1996; Spreitzer *et al.*, 1997).

Therefore the central research question in this study was; **How can** the quality of potential learning opportunities in the work context and individual learning behaviour be measured ?

In order to answer this question, we **will first** describe the theoretical framework comprising the individual learning process at work. We **define** the relevant factors that form part of workplace learning. We then **concentrate** on the two **main** factors **identified**; job characteristics that **can** be described as learning opportunities and learning behaviour exhibited by the individual concerned. **After** this, we **will** describe **how** we developed an instrument that measures these two factors.

Theoretical framework

Learning opportunities

The concept of *learning on the job* implies that the workplace offers **learning** opportunities (Nicholson and West, 1988; Davies **and** Easterby-Smith, 1984). Learning opportunities **can** be described as specific characteristics of tasks and functions that determine the amount of developmental opportunities (Morrison and Brantner, 1992).

The most important work in this area has been **carried out** by researchers at the University of Chicago (McCall *et al.*, 1983; 1988; McCauley *et al.*, 1993). They developed a **profile** of characteristics of a job that could **contribute** to the development and learning process through interviewing with managers at various levels in a variety of organisations and at a broad range of organisational levels. Through analyses these interviews generated 133 items. To test whether these items were valid measures of learning opportunities on the job, they constructed a questionnaire that was given to 692 managers aged between 22 and 63 years. Analysis of the results showed that the following characteristics of **functions** and tasks **can be defined** as learning opportunities at work (McCauley *et al.*, 1994):

- . *Transitions*, e.g. a new **function** unusual responsibilities, or **proving** yourself
- . *Task-related characteristics*, e.g. creating change, high level of responsibility, or non-authority relationships
- *Obstacles*, e.g. a **difficult** organisational environment, **lack** of management

support, **lack** of personal support, or a difficult boss

- *Support*, e.g. a supportive boss.

Table 1 gives a detailed description and some examples of the four categories of developmental job characteristics.

Insert Table 1

The **first two** categories are straightforward; the last **two** are **to** some extent **paradoxical**. The third category states that **lack** of boss support **can stimulate personal** development whilst the fourth category implies the opposite; that is that presence of boss support **can** enhance workplace learning. The explanation is simple. A **lack** of boss support and guidance **means** that initiative and creativity are demanded of the subordinate, and this **can** contribute to the development of new skills and **abilities**. But presence of a supportive boss **can also** enhance learning but in a different way. A supportive boss **can** be expected to give detailed feedback about an individual's development that **can** foster learning and improve performance.

Based on the results of the Chicago studies, **we** concluded that transitions, **task-**related characteristics, obstacles, and support are the **specific** job characteristics that contribute to personal learning and development at work and thus in our research are **defined** as learning opportunities.

McCauley et al. developed a valid instrument for measuring these job characteristics among US managers. **However** in order to be able to use this instrument amongst managers from a different continent, we needed to do a reliability test among European managers.

As **already** mentioned, the described job characteristics **could** contribute to the development **and** growth of managers. They were potential opportunities to learn. **However mere** exposure to a learning opportunity does not **mean** that **any** learning **will actually take place**. The amount of actual learning engendered **will depend** on the way individuals **learn from** their work experience. This is called their learning behaviour.

Learning behaviour

Learning behaviour describes the way an individual approaches his or her work environment and work experiences (Reynolds, 1997; Vermunt, 1992; Kolb, 1984).

Most of the studies in the literature are concerned with learning behaviour in a school or university context but we were able to find two studies that focused specifically on the learning behaviour of managers. These were by Megginson (1996) and Hoeksema et al. (1997) and both studies used factor analysis of survey data to develop their categories of learning behaviour.

Megginson (1996) found two kinds of learning behaviour among managers that he called *emergent* learning and *planned* learning. *Emergent* learning involves unpremeditated learning, characterised by retrospective exploration of experience. *Planned learning* is characterised by careful deliberation prior to action. It is more learning than performance oriented.

Hoeksema also distinguished two kinds of learning behaviours; meaning orientation and instruction orientation (Hoeksema et al., 1997). *Meaning oriented learning* is a retrospective learning approach that is characterised by a search for the deeper meaning of experiences. It is again more learning than performance oriented. *Instruction oriented learning* in contrast is a learning approach that is characterised by a search for superficial information, guidelines and expectations regarding tasks prior to taking action. It is more performance than learning oriented.

Taking these studies as starting points, we will examine whether these four kinds of learning behaviour are, in fact, independent of each other. It is for example quite possible that the way managers learn can be characterised by both meaning oriented and instruction oriented learning or planned learning. This is because the first two refer to cognitive aspects of learning while the two last mentioned stresses the behavioural aspects of learning (Van der Sluis, 2000).

Method

Data collection

In 1998 we conducted a survey among two groups of managers. The first group included Dutch workers who were employed with a variety of different companies in the Netherlands. They were drawn from participants in a management course run by a Dutch management centre. The response rate was 72 % (N=65). The respondents, mainly male (54), were on average 33 years old with slightly more than 8 years work experience. The educational level of the 65 respondents was high since 51 had at least their bachelor degree.

The second group consisted with managers **from** more than twenty different nationalities **who** were working in different counties **across** Europe and **who** had all recently graduated (< 3 year) with **MBAs from** the Rotterdam School of Management. The response **rate** was 60 % (N=63). 89 % of these respondents were male and were on **average** 31 years old.

Both groups were similar as regards their age, educational background, career phase, and career aspirations.

Both groups **received** a questionnaire of which one part measured their learning opportunities and another part their learning behaviour. The **first** group filled in a Dutch **version** and the second international group an English **version** of the same questionnaire.

Analyses

In order to develop the measure of learning opportunities the answers of both groups on the McCauley *et al.* scale were utilised and the reliability of the measure was examined again using both sub samples.

The learning behaviour measure was constructed using only the international sample since this group was felt to be more representative for European managers. **However**, the reliability of the scale was tested on both samples.

Measurement of learning opportunities

Design

For the measurement of learning opportunities on the job, we built on the already mentioned Developmental Job **Profile** (DCP) as developed by McCauley *et al.* (1993, 1994) which has been shown to be a reliable (test-retest reliability between .81 and .93) and valid (internal consistency $\alpha = .95$) measurement instrument (N = 692) for US managers. Our goal was to examine the reliability of the instrument among a European sample and **also** to see whether -in order to increase its practicality- the large number of items (104) could be reduced.

The existing scale consisted of four **categories** as **defined** above (see Table 1). 15

items measuring Transitions (e.g. ‘You have to manage something with which you are unfamiliar’), 21 items measuring Obstacles (e.g. ‘You manage a business or unit with financial difficulties’), and 4 items measuring Support (e.g. ‘Your boss gives you useful **advice** and support’). Task related characteristics were measured as follows: 31 items measuring Creating change (e.g. ‘This job includes launching new organisational ventures’), 27 items measuring High level responsibilities (e.g. ‘Your **success** or failure in this job **will** be evident to **higher** management’), and 6 items measuring Non-authority relationships (e.g. ‘To **achieve** your most important goals, you must influence peers at similar levels in other units, functions, etc.’). **All** questions could be answered on a **5-point** scale **from** 1 (not at **all** descriptive for me) to 5 (extremely descriptive for me).

To examine the reliability of these four categories among European managers, we **placed all** 104 items in **random** order and analysed the responses **from** both our subsamples.

Results

With the use of reliability tests with Cronbach $\alpha > .60$ as criterium, we developed a new scale of ‘only’ 42 items, spread over the four existing categories. The distribution of the 42 items over the different categories as **well** as the reliability of the **scales** per sample as presented in Table 2.

Insert Table 2

These results **indicate** that we have developed a reliable instrument that **can** be used to measure the potential learning opportunities in the work environment. This finding parallels previous work among similar samples which showed that the same 42 items appeared to form a reliable instrument to measure developmental job opportunities among European managers (Van der Sluis, 2000).

The intercorrelations between the different **scales** were similar for both sub samples (see Table 3).

Insert Table 3

As **can** be seen in the table, there are a number of significant intercorrelations between the different categories of learning opportunities. This is of course hardly surprising since **all** four **scales** measure a **specific** category within the same overall concept; potential learning opportunities on the job.

And there is, as expected, a significant negative correlation between obstacles and boss support. A possible explanation could be that there are more or less two groups of managers. One group of managers **who** are **carefully** supported and advised by their **bosses** and **who** thus experiences few obstacles. And another group of managers **who** are not supported and advised by their **bosses** since the **latter** want them to have the opportunity of showing their initiative and creativity in overcoming the obstacles facing them.

Below the scores on the amount of learning opportunities per category is presented per group.

Insert Table 4

In the table it **can** be seen that there are only small differences in the learning environment of Dutch and European **executives**. These differences are tested with t-tests and none of the differences were significant. **However**, the scores of the Dutch group are for **all** four categories **higher** than the scores of the European group and they **also** have smaller standard deviations. This suggests that the Dutch **executives** are a more homogeneous group than the Europeans. This is of course hardly surprisingly since the European group are **managing across** a variety of different cultures and thus **across much** more divergent work environments.

Measurement of Learning behaviour

Design

We used the studies of **Hoeksema et al.** and Megginson as described above to develop our measure of learning behaviour of managers. Both these studies were based on questionnaires. The questionnaire of **Hoeksema et al.** consisted of 23 items to be answered on a 5-point **scale from** 1 (never or only rarely true for me) to 5 (always or **almost** true for me) and Megginson's of 12 items to be answered on a 7-point **scale from** 1 (never true for me) to 7 (always true for me).

We combined the two existing questionnaires into one. It started with the 23 items of Hoeksema *et al.*; 12 items measuring Meaning oriented learning (e.g. ‘I try to find out how various aspects of the problems I come across link together’), and 11 items measuring Instruction oriented learning (e.g. ‘I like to be told precisely what is expected from me’), all measured on the original 5-point scale. After this followed the 12 items of Megginson; 6 items measuring Planned learning (e.g. ‘I set targets for my development’) and also 6 items measuring Emergent learning (e.g. ‘It is important to be open to experience; then learning will come’), all measured on the original 7-point scale.

Results

The data were examined using principal component analyses which showed that, based on the criterium eigen value > 1 , four factors could be distinguished accounting for a total of 60.7 % of the variance. These four factors corresponded with the four kinds of learning behaviour as originally distinguished by Hoeksema *et al.* and Megginson.

However, a second order factor analysis showed that there were two underlying factors that structure the four kinds of learning behaviour. One factor with high loadings of Planned learning (.688) and low loadings of Emergent learning (-.776) and another factor with high loadings of Meaning oriented learning (.874) and low loadings of Instruction oriented learning (-.273).

From this second order factor analysis follows that these four kinds of learning behaviour are related to each other as presented in Figure 1.

Insert Figure 1

This 2-by-2 matrix suggests that the four kinds of learning behaviour are independent of each other (Van der Sluis, 2000) and thus that an individual can approach his working experience using all four kinds of learning simultaneously. A high amount of planned learning can occur in combination with a high amount of instruction-oriented learning, etc.

The new **scale** that resulted from these factor analyses consisted of 15 items. The distribution of the items as **well** as the reliability of the **scales** per sample are presented in Table 5.

Insert Table 5

Based on these results we **can** conclude that we have developed a new instrument that **can** be used to measure the learning behaviour of managers on the job.

The intercorrelations between the different kinds of learning behaviour were similar among both the Dutch and European managerial sample.

Insert Table 6

It **can** be seen in Table 6 that most of the correlations are not significant or **very** low. This **means** that, as we **discussed** in respect of Figure 1, the four kinds of **learning** behaviour are independent dimensions. The only slightly significant positive correlation was found for the relationship between Instruction oriented learning and Meaning oriented learning ($r = .27, p = .03$). This suggests that managers **who** focus on performance and results and look for instructions are **prospective** but **also** at the same **time reflective**, in that they **also** look for the big picture and the underlying **processes** in the organisation. Maybe in order to be able to **perform well** in the future they **also** need to reflect on the past.

The scores on learning behaviour as measured among the Dutch and European sub samples are shown in Table 7.

Insert Table 7

The **mean** scores show that our two sub samples are not **very** different with respect to their learning behaviour. The only significant **difference** is in Planned learning; **where** the Dutch group have on **average** a more planned approach to their learning ($t = 3.91, p = .001$). This could be because they approach their personal learning **process** on the job but **also** their **career** development in a more planned fashion than the European sample. The latter's **higher** score on emergent learning shows that this aspect of being

able to plan is probably less important for them. They need to get ahead. But the **specific** path along which they will **reach** the top is irrelevant. The European sample seem to be high potentials **who** are externally motivated, whereas the Dutch sample are more intrinsically motivated and develop along a **clear** career path in which they value individual learning and career growth.

Conclusion

Learning on the job, management learning, and management development **all** depend on learning opportunities and learning behaviour (Richter, 1998; Reynolds, 1997). Therefore, any instrument that measures the quality of learning on the job **should** consist of **two parts**. On the one hand a measure of learning opportunities present in the work environment and on the other hand a measure of learning behaviour of individuals.

Our measure of learning opportunities is based on previous studies on organisational **factors** that **contribute** to the individual learning **process** at work. Although these studies were based on data that was **collected** among managers in the USA, this work could still be used as a starting point for the measurement of learning opportunities in the European context.

Having devised a somewhat shorter **scale** than the original we were able to show that this instrument measured the same four **categories** of learning opportunities as the American **version** and **also** had an **acceptable** level of reliability. The scores on these four **categories** of our Dutch and European managers show that they have an adequate amount of learning opportunities, especially in terms of support.

Our measure of learning behaviour was **also** based on previous work. Two studies **existed** that were focused on learning behaviour of managers and both distinguished **two** different kinds of learning behaviour. We examined whether these were overlapping or complimentary.

We found **indeed** that four kinds of learning behaviour could be distinguished amongst our sample; Meaning oriented learning, Instruction oriented learning, Planned learning, and **Emergent** learning. These four approaches to workplace learning **can** be put in a **two-by-two** matrix as shown in Figure 1. The respondents in our study seemed to learn in a mainly **emergent** and meaning oriented way. The common denominator of these **two** kinds of learning behaviour is 'retrospection'. From this we could hypothesise that

young, high educated managers in Western Europe learn primarily by reflecting on their work experiences.

Discussion

Workplace **learning** is **characterised** by a continuous interaction between **the individual and the work environment**. The way an individual **learns** affects the **quality of the learning environment**, and vice versa. With respect to learning behaviour **this means** that **this depends** on **the** context in which learning takes **place** (Richter, 1998; Spreitzer et al., 1997; Reynolds, 1997; Van der Sluis, 1999; 2001).

This interaction between learning behaviour and learning opportunities **underlines** the need for further examination of the construct and of the predictive validity of **the** measurements of learning opportunities and learning behaviour. Because of the context **dependence** of learning behaviour, our instrument should be used circumspectly. It is recommended that researchers using our **scale** should analyse the reliability of the measure among **each specific** sample they use. If **further** studies show the instrument to be reliable **across** different groups of employees and in different **contexts**, then we **may** conclude that it does **indeed** measure individuals' learning behaviour. On the other hand if further research show that the instrument is not reliable **across** different groups in different **contexts**, then we **will** have to examine which other ways of learning on the job **can** be distinguished and to what extent the learning context actually affects learning behaviour.

Our instrument **can** be used in further research to analyse the **dynamics** of the individual learning **process** on the job. For example, further research is needed to examine the effect of learning opportunities on performance development. And, more research is needed to investigate whether the amount of learning opportunities do **indeed contribute** to **career success** as has been **frequently** suggested. (Arthur and Rousseau, 1996a; 1996b). Again only longitudinal research **can contribute** to a better **understanding** of the stability of a person's work context. It is **quite** possible that some **people may** prefer to work in a organisational context with relatively few learning opportunities. The level of learning opportunities of these **persons will** then be stable over **time but** at a low level. A recent study of Van der Sluis (2000) **indicated that there were strong** suggestions that this is **indeed** sometimes **the situation**.

Further research on the possible influence of learning behaviour on workplace learning is also important. Some kinds of learning behaviour may be more effective in terms of later career success than others may. It is also possible that there is a particular way of learning that increases the amount of developmental job opportunities. Van der Sluis (2000) showed for example that planned learning has a positive effect on the individuals own perception of the personal career development as well as on the amount of task-related learning opportunities.

It is also important to examine the stability of individual learning behaviour. Recent comparative studies among undergraduate students, those near to graduation, those who had just graduated, and young managers with only a few years work experience, strongly suggest that there are differences in learning behaviour per life or career phase. Undergraduate students appeared to learn mainly in an instruction oriented and planned manner whilst young managers were more emergent and meaning oriented learners. Almost all just graduated students were in between these two groups regarding their learning behaviour (Van der Sluis, 2000). On average, their level of instruction oriented and planned learning behaviour was higher than the level of the managers but they scored lower on these kinds of learning than undergraduates. On the other hand, their scores on emergent and meaning oriented learning behaviour were lower than the scores of managers but higher than the scores of students.

This picture corresponds with results from longitudinal research on the learning behaviour of managers with an MBA background. These results indicated that young MBAs had a high level of instruction oriented and planned learning behaviour shortly after their graduation. However, after three or four years work experience this level dropped whilst the level of meaning oriented learning increased. Their level of emergent learning did not change during their early career stage (Van der Sluis, 2001).

Finally, it would be useful to further explore the intercorrelation between learning behaviour and learning opportunities. Since the individual learning process on the job is an interactive process, we could expect that there are connections between specific characteristics of the learning context and the way people learn from their work. Recent studies support these notions (Yukl en Tracey, 1992; Dix en Savickas, 1995; Hoeksema, 1995; Ashford en Black, 1996; Spreitzer et al., 1997). More specifically, planned learning seems to increase the amount of task-related learning opportunities. Perceived obstacles and transitions result in less instruction oriented learning. However, these findings are based on data measured only at two points in time

($t_1=1998$ and $t_2=1999$) (Van der Sluis, 2000). More extended longitudinal research is needed to shed more light on the **causal** relations and the **dynamics** of the **interactive learning process** in the workplace.

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Table 1 *Examples and characteristics of developmental job components (Based on McCauley et al., 1994)*

Component	Example	Characteristic
Job transitions	Line to staff Increases in scope Radical job moves Changes in employer, status, or function	Proving yourself Novelty Disruption of routine
Task-related characteristics		
Creating change	Start-up operation Fix-it assignment	Freedom to innovate Change setting provides opportunities to develop effective approaches to leadership
High level of responsibility	Organisational level Large-scale operations	Responsibility Visibility Opportunity for impact
Non authority relationships	Serving on task forces Making deals and coordinating among departments	Gaining cooperation without authority
Obstacles	Difficult boss Hardships Negative experiences Experience with crises and diversity	Psychological pain and discomfort
support	Supportive boss	Psychological help and advice

Table 2 *Reliability and number of items per scale (Cronbach's α)*

	Transitions	Obstacles	Support	Task-related characteristics
Executives	.62	.78	.87	.82
MBAs	.72	.72	.76	.86
Nr. of items	7	8	3	24

Table 3 *Intercorrelations of learning opportunities per group of managers*

Correlations between learning opportunities of Executives (below the diagonal) and MBAs (above the diagonal)

		Transitions	Task-related characteristics	Obstacles	support
Transitions	Pearson Correlation	1.000	.561*	.260*	.0
	Sig. (2-tailed)		.000	.045	.448
	N		57	60	61
Task-related characteristics	Pearson Correlation	.375*	1.000	.376*	.060
	Sig. (2-tailed)	.003		.004	.657
	N	62		56	57
Obstacles	Pearson Correlation	.315*	.478*	1.000	-.531**
	Sig. (2-tailed)	.013	.000		.000
	N	61	59		60
Support	Pearson Correlation	.161	.161	-.351*	1.000
	Sig. (2-tailed)	.204	.212	.005	
	N	64	62	62	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4 *Descriptives per category learning opportunities per group managers*
 (measured on an 5-pointscale (1 = ‘not descriptive for me’ to 5 = ‘extremely descriptive for me’)).

Learning opportunities Executives

	N	Minimum	Maximum	Mean	S.D.
Transitions	64	1.52	3.95	2.5742	.5237
Task-related characteristics	62	1.60	3.81	2.8788	.4695
Obstacles	62	1.15	3.63	2.1339	.5019
Support	65	1.00	5.00	3.0846	.9157

Learning opportunities MBAs

	N	Minimum	Maximum	Mean	S.D.
Transitions	61	1.00	3.71	1.8618	.5791
Task-related characteristics	57	1.22	3.86	2.5068	.5712
Obstacles	60	1.13	3.88	2.0667	.6844
Support	61	1.00	5.00	2.9836	1.1776

Table 5 *Reliability and number of items per scale (Cronbach 's a)*

	Planned learning	Instmction oriented learning	Meaning oriented learning	Emergent learning
Executives	.80	.73	.66	.62
MBAs	.73	.73	.62	.62
Nr. of items	5	3	4	3

Table 6 *Intercorrelations of learning behaviour per group of managers*

Correlations between learning behavior of Executives (below the diagonal) and MBAs (above the diagonal)

		Emergent learning	Planned learning	Instruction oriented learning	Meaning oriented learning
Emergent learning	Pearson Correlation	1.000	-.171	.240	
	Sig. (2-tailed)		.278	.188	.062
	N		60	61	61
Planned learning	Pearson Correlation	.131	1.000	.169	-.114
	Sig. (2-tailed)	.301		.196	.384
	N	64		60	60
Instruction oriented learning	Pearson Correlation	.035	.127	1.000	.273*
	Sig. (2-tailed)	.785	.315		.029
	N	64	65		62
Meaning oriented learning	Pearson Correlation	-.125	.052	.272*	1.000
	Sig. (2-tailed)	.325	.678	.029	
	N	64	65	65	

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7 *Descriptives of learning behaviour per group of managers*

* Measured on a 7-point scale (1 = 'never true for me' to 7 = 'always true for me')

** Measured on a 5-point scale (1 = 'never true for me' to 5 = 'always true for me')

Learning behavior Executives

	N	Minimum	Maximum	Mean	S.D.
Emergent learning*	64	1.50	5.00	3.3828	.7113
Planned learning*	65	2.00	6.60	4.1662	1.0515
Instruction or. learning**	65	1.25	4.50	2.4462	.7545
Meaning or. learning**	65	1.25	5.00	3.7654	.6759

Learning behavior MBAs

	N	Minimum	Maximum	Mean	S.D.
Emergent learning	61	2.00	7.00	5.3689	1.0120
Planned learning	60	1.38	6.50	3.4500	1.1994
Instruction or. learning	62	1.00	4.50	2.7298	.8252
Meaning or. learning	62	2.25	5.00	3.9073	.5906

Figure 1 *Learning behaviour of managers*

