

Full Length Research Paper

Moderating effect of employees' education on relationship between feedback, job role innovation and organizational learning culture

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Accepted 19 August, 2010

Learning is a sacred and increasingly growing need of the business organizations. The learning culture facilitates the employees' performance, that is increases their efficiency and effectiveness with innovation, creativity and behavior modification. The employees learn the prestigious values of organizational learning culture and color themselves in a way of getting better work experience and desired practices their organization wants. Consequently, it creates a greater organizational perspective for better job performance. The study aims at investigating the significance of moderating effect of employees' education on relationship between feedback, job role innovation and organizational learning culture, in the education sector of Pakistan. For the purpose of this study, 186 self administered questionnaires were filled from lecturers, assistant professors, associate professors and professors belonging to various public and private sector universities. Results showed that the feedback and job role innovation have a significant impact on organizational learning culture. Managerial implications, limitations of research and future guidelines have also been discussed.

Key words: Organizational learning culture, feedback, job innovation, learning organizations.

INTRODUCTION

The process of learning has a significant impact on the performance of business organizations. The learning prompts the capability building (McEvily and Chakravarthy, 2002), among employees and maximizes their potential for working in the organization. The employees will be more satisfied and progressive when they learn, adopt and perform under the shadow of strong organizational learning culture. According to Yang (2003), the values of organizational learning culture are so productive that they develop capabilities among employees with increasing levels of intrinsic motivation, productivity and knowledge. The values of organizational learning culture motivate the employees, color the experiences and increase their professional abilities to perform well in the organizations which not only increase the output but also their feedback. Probst and Büchel (1997) and Powell (1998) posited a view that transfer of technical knowledge,

dissemination, social learning and interaction is a motivating factor for employees' productivity enhancement. Employees' education concurrently fosters the performance based activities and enhances the significance of their existence for acquiring a well functioned organizational perspective. The informative and learned workforce gets the managerial attention and enjoys the precision of work innovation and organizational vision with a sustaining performance integration and social learning perspective, thereby enabling their organization to go global. The culture replicates the behavior of employees at work and modifies their approach as resultant outcome of their experience sharing and perception. Tsang (1997) and Alas and Vadi (2003) stated that learning culture facilitates the employees with innovation, precision and creativity at work with greater job involvement and psychological affiliation. The prestigious values of organizational learning culture thus make the employees grow more, be committed, loyal and remain coordinated for organizational success.

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LITERATURE REVIEW

Organizational learning culture

The process of learning is consistent with the growth, development, and value addition. The learning culture stimulates the employees to maintain their performance and groom themselves for a higher organizational performance. Senge (1994) defined it as the process of innovation and facilitation by enhancing the financial performance of the organization with a committed and learned workforce. Majority of the organizations today are spending resources and are trying to transform their management in way of growing capabilities, and productive behavior under the light of their culture. Watkins and Marsick (1993) stated that the employees perceive, learn, adopt, share and communicate their working ways with each other for a significant impact. The organizations want to obtain the cultural compatibility of their employees for a strategic gain. So the learning culture motivates the employees to show more output and performance of the employees in order to enhance the profitability and to retain the interest of stakeholders. According to Whittington and Dewar (2004), the learning process is an exclusive feature of an organization, that is, employees of an organization develop themselves by absorbing the valuable traits of workplace behavior.

The process of learning helps employees for solving the complex problems in a well structured way with least time and efforts. Sta. Maria (2003) and Castiglione (2006) are of the view that learning urges the employees' understanding of and communication within the organizational environment and creates developmental and constructive change in employees' perception and greater systematic approach towards work. Organizational learning culture spreads the ethical and social values like, coordination, wholeness, emotional attachment and organizational affiliation which in turn lead to greater feedback, work proficiency and creativity at workplace. According to Huber (1991), employees' interaction, values sharing and interpersonal communication affect their routine work and make them more acceptable for organization (Schein, 1992), because mutual cooperation and collaboration at work, resultantly increases the social well being of all. Employees under the influence of strong learning culture find their organization friendlier, as organizational learning culture makes them caring and cooperative (Senge, 1997). In previous researches feedback and job innovation have not been investigated extensively, but now they are receiving growing interest to fill the gaps in literature on moderating the effect of education in concept of organizational learning culture because of its vitality and significance.

The process of learning facilitates the process of innovation and further modification of information. Czarniawska (2001) is of the view that it is the mark of a strongly held learning culture that it always constructs

further with methodical innovation and renovation (Baughman and Kaske, 2002), rather than mere repetition of information; which results in an integrated and sophisticated climate, (Forman 2000) that increases the accuracy, appropriateness, output and innovative behaviors (Worrell 1995). Thus the organizational learning culture initiates a change in the organization, that is, a change in its vision, communication, collaboration and the process of development (Shoaf, 2004; Phipps, 1993).

Feedback

The feedback is defined as the response from the job that helps employees to increase their productivity. Cole (2006) defined it as a response that positively impacts on productivity; Baron and Kreps (1999) defined it as the resultant output of employees' efforts, due to effective organizational intervention, which resultantly generates the positive outcome (Thorndike, 1927). The empirical research states that the feedback has a significant impact on the job performance of employees. (Robinson and Weldon, 1993; Karakowsky and Miller, 2002). The organizational learning culture enhances the feedback of employees, as employees' adoptability of culture and integrated performance assures quality management and brings more effective feedback from their higher authorities (Guzzo et al., 1985). According to Lorenzet et al. (2006), the greater feedback motivates the employees to work in such a perspective that their mutual productivity, modified behavior and social learning lead to more fruitful and lucrative growth of organization.

Employees with higher feedback and performance will be more satisfied and committed and tend to act in a coordinated and appropriate manner (Bar and Conlon, 1994). Latham and Locke (1979) stated that good feedback not only motivates the employees but also inspires them to learn and retain their better performance. Tylor et al. (1996) stated the view that the learning, experience and systematic practices impact positively and significantly on feedback of employees, as learning behavior and knowledge simultaneously create competitive edge. The employees' contribution in the cultural perspective of work and task activities gets the managerial attention, making them to get their share in the managers' good book. This is because the learned employees create a pleasing impact that can make a company profitable and long lasting.

Training and educating create an orderly difference in the organizational perspective and employees' perception. Kluger and DeNisi (1996) are of the view that the more the employees learn from the organizational environment the better they perform because they get appreciation, acknowledgement and feel more devoted to work (Hamilton, 2009). Pellegrino et al. (2001) stated that it is the essence of positive feedback that makes employees more valued because they are admired for

their work and for value addition. The organizations working with such a systematic vitality and social perspective of learning set example for others.

Job role innovation

The innovation is so explained as the process of creating something new or different after learning and precision. Landau and Nathan (1986) and Van de Ven (1986) defined innovation as modification and change in behavior after learning and practices. Learning the values of organizational culture, sharing experience and work tactics lead employees to develop innovative and improved ways of doing job. It is evident from the research that the process of learning has emphasized and facilitated the innovation and creativity (Verdonschot, 2006). Learning motivates the employees by providing them with more confidence and precision to do the work further. Keursten et al. (2004) are of the view that learning stimulates the process of grooming, capability building (Lee and Hong, 2002), and skill building in employees which serve as the essence for competitive advantage (Cascio, 1995).

Job innovation is what most managers desire from their employees as it develops the new and productive methods for utilizing useful efforts. According to Neilsen and Winter (2005), innovation is the principal component associated with the employees' consciousness to maintain organizational success (Ju et al., 2006). Smartness of innovation is notion of financial stakeholders' attraction and loyalty. Same is the reason why Van de Ven (1986) stated that the future of most of the organizations relies on how much the employees possess the variety and add value to their organizational output which can prompt the survival and constructive development (Carmeli et al., 2006) of an organization in the long run. Employees perceive and obtain information from internal environment and co-workers communities tend to modify it and put their minds in practice for creating a difference (Wu et al., 2002). The employees' educational background and organizational system plays very important role in determining their creativity and innovative instinct at work (Andreasen, 1995).

Jong and Hartog (2007) stated that the education of employees with knowledge and precision is likely to determine their creativity and innovative behavior at work especially when it comes to the sectors that require intensive learning and strong educational background from employees e.g. IT, marketing, research and education etc. Empirical research stated that the process of learning brings more job involvement, as the employees will think differently and put more rigorous efforts in delivering quality output for making their organization unique and systematically productive (Amabile, 1988). In the light of the above literature review the following hypotheses are deduced:

H₁: Feedback impacts positively and significantly on Organizational Learning Culture.

H₂: Job role innovation impacts positively and significantly on Organizational Learning Culture.

H₃: Educational level of employees has moderating effect on relationship between Feedback and Organizational Learning Culture.

H₄: Education level of employees has a moderating effect on relationship between Job Role Innovation and Organizational Learning Culture.

RESEARCH DESIGN AND METHODOLOGY

The present study investigates the moderating effect of employees' education on relationship between feedback, job role innovation and organizational learning culture. The sample consists of lecturers, assistant professors, associate professors and professors. The university teachers work in both public and private sector universities. Lahore is one of the biggest cities of Pakistan with well known and renowned educational institutes of Asia. At present, there are 25 public and private sector universities present in Lahore. All these universities are recognized, affiliated and chartered by the Higher Education Commission (HEC) of Pakistan. The faculty working in all these universities is officially trained and oriented with various educational reform programs such as academic conferences, training workshops and other technical sessions. The similarity in work and nature of job of the faculty constitutes homogenous population and by selecting a sample of lecturers, assistant professors, associate professors and professors from the large city of Lahore can represent the population of university teachers from rest of Pakistan. For the purpose of investigation, stratified sampling technique was used in which different strata were prepared for recording the responses of lecturers, assistant professors, associate professors and professors of various universities. In our population, the number of lecturers, assistant professors, associate professors and professors varies greatly that is the number of employees reduces as it moves from lecturers to professors in each university. Likewise, the female teaching staff is less as compared to males especially at higher academic positions like full professors. Therefore, to represent the whole population, the strata were considered appropriate for sampling design. A total of 210 questionnaires were distributed, out of which 186 completely usable questionnaires were returned at a response rate of 88%.

Definition of variables

Organizational Learning Culture

The organizational learning culture is defined as the sequential process which utilizes information and facilitates further by developing, transforming and innovating. The organizational learning culture is measured with the questionnaire developed by Watkins and Marsick (1993). The responses are recorded on a five-point Likert type scale ranging from 1 "strongly disagree" to 5 "strongly agree".

Feedback

The feedback is defined as the work assessment normally in the form of motivating statements given to employees by the organizational management on performing the job excellently. The feedback

Table 1. Mean and standard deviation of variables (N=186).

Variable	Minimum	Maximum	Mean	Std. deviation
Learning culture	2.25	4.63	3.7742	0.52993
Feedback	2.60	4.80	3.7204	0.47931
Job role innovation	1.50	4.00	2.7706	0.54603

Table 2. Pearson's correlation among variables (N=186).

Variable	1	2	3
Education level			
Learning culture	-0.115		
Feedback	-0.224**	0.457**	
Job role innovation	-0.124	0.391**	0.390**

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

feedback was measured with questionnaire developed by Sims et al. (1976). The responses are recorded on a five-point likert type scale ranging from 1 "very little" to 5 "very much".

Job role innovation

Job role innovation is defined as the process by which employees change, modify or transform their activities after learning and creativity. It was measured with the questionnaire developed by West (1987). The responses are recorded with the use of key within the questionnaire, in which a four-point Likert type scale ranging from 1 "much the same" to 4 "completely different" was used.

ANALYSES AND RESULTS

The analysis of data is done with the help of SPSS 15 in which coded data are entered in tabular format. The analyses of the data showed very interesting results. The overall reliability of the data that is Cronbach's Alpha was found $r = 0.90$. The reliability of the individual variables was found as $r = 0.75$ for feedback, $r = 0.80$ for job role innovation and $r = 0.80$ for organizational learning culture. In all of 186 questionnaires, 108 are males and 78, females. Majority of the respondents 126 (67.7%) belong to age group of 25 to 29 years while the least number of 1.1%(2) respondents belong to the age group of 40 to 49 years. Majority of the respondents, 108 (55.4%) are married, while the rest 83 (44.6%) are unmarried. Amongst all the respondents, 82 (44.1%) possess a job tenure of 2-3 years while the only 2 (1.1%) respondents have a job tenure of 5 to 10 years. In our sample, 99 respondents belong to private sector while the rest 87 belong to public sector. Majority of the respondents (95) have education level master or above while the only 3 respondents have educational level of undergraduate or above. In all of 186 respondents, 58 (31.2%) are holding managerial position at job while the rest 128 (68.8%) have non- managerial position at job.

Table 1 shows the mean values of all the variables. The mean values of learning culture, feedback and Job role innovation are found as $M = 3.77$, 3.72 and 2.7 with standard deviations $.52$, $.47$ and $.54$, respectively. Amongst all the variables the mean value of the learning culture is the highest, which means that the culture in the organizations is quite effective in keeping the higher performance of the employees. The employees' professional abilities and skills are significantly influenced by the culture as employees' interpersonal communication and learning from each other made them more competent and contributing.

Table 2 shows the Pearson correlation among all the variables. The correlations between learning culture and feedback and learning culture and job innovation are found as $r = 0.457$ $p < 0.01$ and $r = 0.391$ $p < 0.01$. The highest correlation is found between learning culture and feedback which means that the stronger the learning culture the more is the output and productivity of the employees. They are working in systematic and concurrent job perspective, that is, they are satisfied from the working conditions and management's performance appraisal programs. The organizations value their care, acquiescence, dedication, behavioral integration and job involvement.

The moderating effect of education is found in Table 3. The values of the magnitudes of the Independent variables have been reduced due to the presence of moderating variable (Baron and Kenny, 1986). In the moderating effect of education on relationship between feedback and learning culture the beta value was reduced from $B = 0.457$ to $B = 0.160$ with a change in level of significance p-value from 0.00 to 0.29. The education also moderates the relationship between job role innovation and learning culture as the change in beta was recorded from $B = .391$ to $B = .199$ along with significance level p-value from 0.00 to 0.006. The significance of the moderation explains that the employees' education level

Table 3. Moderating effects of employees' education (N=186).

Variable	R ²	R ² Change	F	Sig.	t-value	Beta
FB (Feedback)	0.209	0.209	48.47	0.00	6.96	0.457
ED (Education)	0.021	0.021	3.94	0.04	-0.198	-0.145
FB × ED	0.026	0.026	4.83	0.29	2.19	0.160
Jl (Job role innovation)	0.153	0.153	33.11	0.00	5.75	0.391
ED (Education)	0.021	0.021	3.94	0.04	-0.198	-0.145
Jl × Ed	0.040	0.040	7.61	0.006	2.76	0.199

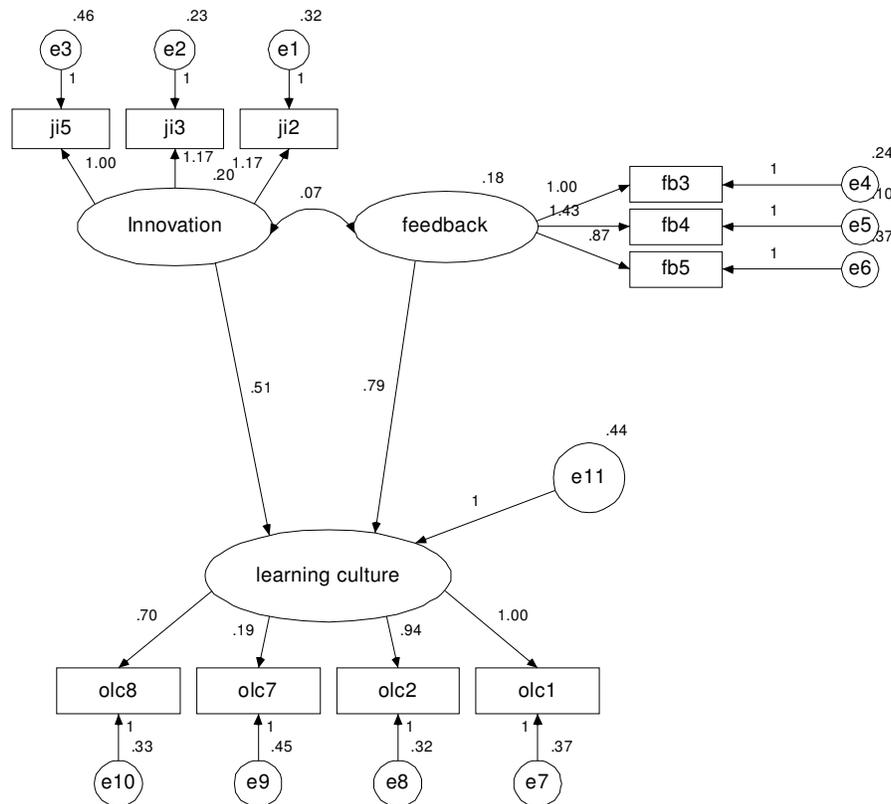


Figure 1. Causal model tested.

is significantly associated with devoting themselves in getting the desired appreciation and feedback as well as to work with innovative, ingenious and systematic work approaches. Further analysis of the model shows that both the variables have significant impact on the learning culture in structured path. The path diagram in Figure 1 indicates the causal model tested.

The SEM results explained that the causal model has a Goodness of Fit Index (GFI) =.95, Adjusted Goodness of Fit Index (AGFI) =.92, Comparative Fit Index (CFI) =.97, Normed Fit Index (NFI) =.91, Incremental Fit Index (IFI) =.97, Relative Fit Index (RFI) =.88, Non-Normed Fit Index (NNFI) =.964, Root Mean Square Residual (RMR) =.031, Root Mean Square (RMSEA) =.046 and $X^2 = 44.43$ with a significance p-value =.071. The overall model is a good

fit. Since the GFI and AGFI are greatly influenced by the sample size so the CFI and RMSEA are considered more appropriate for model explanation. The CFI, GFI, AGFI, NFI, NNFI and IFI values of .90 indicate good fit. The value close to 0.00 of RMSEA indicates perfect fit. Also the X^2 significance greater than $t = 0.05$ indicates a good fit.

DISCUSSION

The present study aims at exploring the moderating effect of employees' education on relationship between feedback, job role innovation and organizational learning culture. The learning culture imparts bemusing impact on

Table 4. Causal model summary.

RMR	GFI	AGFI	CFI	NFI	IFI	NNFI	RMSEA	Chi-Square	CMIN/DF	P
0.031	0.95	0.92	0.97	0.91	0.97	0.96	0.046	44.43	1.38	0.71

employees' performance, as learning, developing and interpreting the information and knowledge foster the process of organizational change and make employees more innovative and creative by enhancing their performance and feedback. The employees as a result of social interaction, interpersonal learning and experience sharing learn the essential and key traits of performing tasks which makes them more valuable for their organization. Going global is the mission of all the organizations and can only come true when a surge of doing best and performing with significant contribution becomes a standard of work among employees. Cultural perspective of learning facilitates the performance monitoring, supervisory and managerial intervention thereby causes depletion in employees' behavioral procrastinations and prompts the patterns of social learning and behavioral integration.

The results showed that the organizational learning culture is very prominent in the organizations, which means that the employees are quite learned and are learning from the experiences of their co-workers and bosses by means of meaningful interactions and knowledgeable sharing for solving unseen problems. The employees' performance is being accurately monitored and evaluated and they are quite satisfied from the managerial assessment and feedback they are receiving which increases the confidence and their trust on the organization. This confidence also stimulates them to develop innovative ways of performing tasks. Thus integrative organizations and their quality management by means of organizational learning support the development of the employees' skills, abilities and talents for higher financial performance of their organizations.

We posited four hypotheses H_1 to H_4 , all of which are accepted significantly. The results showed that the educational level of the employees plays a significant role in developing the professional attitude and behavior of employees. The educational background, in fact, supports employees and provides platform for quality learning and behavior modification with an increasing performance and creativity. Having such a distinction, they receive good feedback from their managers.

MANAGERIAL IMPLICATIONS

The HR practitioners and policy makers must pay attention in developing their organizational learning culture in order to make their work force more efficient, effective, integrated and innovative. Training, orientation and performance evaluation programs should be designed in such a way that employees feel encouraged and may

interact, communicate and learn from each other and can prove them more accurate and appropriate for their respective duties and jobs. Their needs and requirements at each level of management should be identified and fulfilled appropriately. The usefulness of the system in order to integrate and systematize the behavioral patterns of employees is the challenge for the organizations' top management. Employees' understanding with organizational culture and learning from the cultural precision for gaining a performance enhancement can be made judgmental through guiding and assessing their activities adequately. The learning culture should be flexible enough that it can promote the employees' skill of innovation, renovation and modification as the more the employees will learn, the more they will be innovative and constructive. Therefore, HR managers should also pay attention while recruiting the employees, as they should prefer those employees whose ideology and job approach matches with the ideology of the organization.

LIMITATIONS AND FUTURE GUIDELINES

The present study investigated only one sector of economy that is, the educational sector. However, if more sectors were investigated the results of investigation could be widely applicable. The sample size taken in this study is also small and data are obtained on the cross sectional basis. The future guidelines for the study should also be noted that more sectors of economy should be involved and the data should be obtained through mix method, time series (longitudinal basis) in which the sample size should be large. The learning environment of each university varies and possesses unique values of the culture, so the sample should be selected in a way that it will enhance the demographic representation of the population. Further, the future research should include the three levels of organizational commitment, that is affective, normative and continuance commitment along with organizational citizenship behavior. In future, the perception of learning culture at different managerial levels should also be investigated.

REFERENCES

- Alas R, Vadi M (2003). The impact of organizational culture on organizational learning at six Estonian hospitals. *TRAMES*, 7(57/52), 83–98.
- Amabile TM (1988). A model of creativity and innovation in organizations", in Shaw BM, Cummings LL (Eds). *Res. Organ. Behav.*, 10, 123-67.
- Andreasen LA, Coriat B, Hertog FD, Kaplinsky R (1995). Europe's Next

- Step: Organizational Innovation, Competition and Employment, Frank Cass, pp. 305-308.
- Barr SH, Conlon SJ (1994). Effects of distribution of feedback in work groups. *Acad. Manage. J.*, 37: 641-55.
- Baron RM, Kenny DA (1986). The Moderator-Mediator variable distinction in Social Psychological research: Conceptual, strategic, and statistical considerations. *J. Person. Soc. Psychol.*, 51: 1173-1182.
- Baron JA, Kreps DM (1999). *Strategic Human Resources: Frameworks for General Managers*. John Wiley, New York, NY.
- Baughman SM, Kaske NK (2002). Impact of organizational learning. *Portal Lib. Acad.*, 2(4), 665-9.
- Carmeli A, Meitar R, Weisberg J (2006). Self-leadership skills and innovative behavior at work. *Int. J. Manpow.*, 27(1): 75-90.
- Cascio WF (1995). Whither Industrial and Organizational Psychology in a changing world of work? *Am. Psychol.*, 50: 928-939.
- Castiglione J (2006). Organizational learning and transformational leadership in the library environment. *Lib. Manage.*, 27(4/5): 289-299.
- Cole JB (2006). *Toxic Feedback: Helping Writers Survive and Thrive*. University Press of New England, UPNE.
- Czarniawska B (2001). Anthropology and organizational learning. In M. Dierkes, A. Berthoin Antal J. Child, I Nonaka (Eds.), *Handbook of organizational learning and knowledge*. Oxford, UK: Oxford University Press.
- Forman DC (2000). Changing perspectives: From individual to organizational learning. Retrieved on June 1, 2010, from <http://www.internetime.com/blog/archives/001230.html>
- Gliem JA (2005). *Applied multivariate statistical analysis*. Columbus, OH: The Ohio State University Copy Center.
- Guzzo RA, Jette RD, Katzell RA (1985). The effects of psychologically based intervention programs on worker productivity: a meta-analysis. *Personnel Psychology*, 38(2): 275-92.
- Hamilton RL (2009). *Managing Writer*. XML Press.
- Huber G (1991). Organizational Learning: The Contributing Processes and the Literatures. *Organ. Sci.*, 2(1): 88-115.
- Jong JPG, Hartog DND (2007). How leaders influence employees' innovative behavior. *Eur. J. Innov. Manage.*, 10(1): 41-64.
- Ju TL, Li CY, Lee TS (2006). A contingency model for knowledge management capability and innovation. *Ind. Manage. Data Syst.*, 106(6): 855-877.
- Karakowsky L, Mille D (2002). Teams that listen and teams that do not: exploring the role of gender in group responsiveness to negative feedback. *Team Perform. Manag.*, 8(7/8), 146 – 156.
- Keursten P, Verdonschot SGM, Kessels JWM, Kwakman CHE (2004). Relating learning, knowledge creation and innovation, case studies into knowledge productivity, paper presented at the 5th European Conference on Organizational Knowledge, Learning and Capabilities (OKLC), Innsbruck.
- Kluger AN, DeNisi A (1996). The effects of feedback interventions on performance: a historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychol. Bull.*, 119(2): 254-84.
- Landu R, Rosenberg N (1986). *The Positive Sum Strategy: Harnessing Technology for Economic Growth* (Paperback). National Academies Press.
- Latham GP, Locke EA (1979). Goal setting – a motivational technique that works. *Organ. Dyn.*, 8(1): 68-80.
- Lee SM, Hong S (2002). An enterprise-wide knowledge management system Infrastructure. *Ind. Manage. Data Syst.*, 102(1/2): 17-25.
- Lorenzet SJ, Cook RG, Ozeki C (2006). Improving performance in very small firms through effective assessment and feedback. *Educ. Train.*, 48(8/9): 568 – 583.
- McEvily SK, Chakravarthy B (2002). The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge. *Strat. Manage. J.*, 23: 285-305.
- Neilsen EH, Winter M (2005). Building a learning community by aligning cognition and affect within and across members. *J. Manage. Educ.*, 29(2), 301-18.
- Pellegrino JW, Chudowsky N, Glaser R (2001). *Knowing what students know: The science and design of educational assessment*. Washington, DC: National Academies Press.
- Phipps SE (1993). Transforming libraries into learning organizations. *J. Lib. Adm.*, 18(3/4): 19-37.
- Powell WW (1998). Learning from collaboration: knowledge and networks in the biotechnology and pharmaceuticals industries. *Calif. Manage. Rev.*, 40(3): 228-41
- Probst G, Buchel B (1997). *Organizational Learning: The Competitive Advantage of the Future*. Prentice-Hall, Hemel Hempstead.
- Robinson S, Weldon E (1993). Feedback seeking groups: a theoretical perspective. *Br. J. Soc. Psychol.*, 32, 71-86.
- Schein EH (1992). *Organizational Culture and Leadership*. Jossey Bass Publishers.
- Senge PM (1994). Communication and learning. *Harv. Bus. Rev.*, 72(6), 182-183.
- Senge P (1997). Through the eye of the needle. In Gibson, R. (Ed.), *Rethinking the Future*. Nicholas Brealey Publishing, London., 122-46.
- Shoaf EC (2004). New leadership for libraries: who has the right stuff?. *College Res. Lib. News.*, 65(7): 363-365, 375.
- Sims HP, Szilagyi AD, Keller RT (1976). The measurement of Job Characteristics. *Acad. Manage. J.*, 19, 195-212.
- Sta-Maria RF (2003). Innovation and organizational learning culture in the Malaysian public sector. *Adv. Dev. Hum. Resour.*, 5(2): 205-214.
- Tsang EWK (1997). Organizational Learning and the Learning Organization: A Dichotomy between Descriptive and Prescriptive Research. *Hum. Relat.*, 50: 73–89.
- Thorndike EL (1927). The law of effect. *Am. J. Psychol.*, 39: 212-22.
- Taylor MS, Audia G, Gupta AK (1996). The Effect of Lengthening Job Tenure on Managers' Organizational Commitment and Turnover, *Organ. Sci.*, 7(6): 632-48.
- Van de Ven A (1986). Central problems in the management of innovation. *Manage. Sci.*, 32: 590-607.
- Verdonschot SGM (2006). Methods to enhance reflective behavior in innovation processes. *J. Eur. Ind. Train.*, 30(9): 670-686.
- Watkins KE, Marsick VJ (1993). *Sculpting the learning organization: Lessons in the art and science of systematic change*. San Francisco, CA: Jossey-Bass.
- West MA (1987). A measure of role innovation at work. *Br. J. Social Psychol.*, 26: 83-85.
- Whittington D, Dewar T (2004). A strategic approach to organizational learning. *Ind. Com. Train.*, 36(6/7): 265-268.
- Worrell D (1995). The learning organization: Management theory for the information age or new age fad?. *J. Acad. Librarianship.*, 21(5): 351-357.
- Wu WY, Chiang, CY, Jiang JS (2002). Interrelationships between TMT management styles and organizational innovation. *Ind. Manage. Data Syst.*, 102 (3/4): 171- 183.
- Yang B (2003). Identifying valid and reliable measures for dimensions of a learning culture. *Adv. Dev. Hum. Resour.*, 5(2): 152-162.