DOCUMENT RESUME

ED 477 497 CE 085 082

AUTHOR Luoma, Markku; Nokelainen, Petri; Ruohotie, Pekka

TITLE Learning Strategies for Police Organization--Modeling Organizational Learning Perquisites.

PUB DATE 2003-04-00

NOTE 13p.; Paper presented at the Annual Meeting of the American Educational Research Association (AERA) "Accountability for Educational Quality: Shared Responsibility" (84th, Chicago, IL, April 21-25, 2003).

PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)

EDRS PRICE EDRS Price MF01/PC01 Plus Postage.

DESCRIPTORS Educational Environment; Educational Research; Foreign Countries; Influences; Learning Motivation; Learning Processes; *Learning Strategies; Learning Theories; Literature Reviews; *Models; Organizational Communication; *Organizational Culture; *Organizational Development; *Police; Prerequisites; Professional Development; Questionnaires; Research Methodology

IDENTIFIERS *Finland; Learning Organizations; *Organizational Learning; Work Based Learning

ABSTRACT

The factors contributing to organizational learning in police units in Finland and elsewhere were examined to find strategies to improve the prerequisites of learning and compare linear and nonlinear methods of modeling organizational learning prerequisites. A questionnaire was used to collect data from the 281 staff members of five police departments in western Finland (74.9% of the total study population). The respondents included patrolmen (42%), investigating officers (24%), and individuals performing other duties such as administrative and office work (34%). The questionnaire responses were analyzed by exploratory factor analysis and Bayesian dependency network modeling. The principal component analysis resulted in a 13-component solution with 68% of the total variance explained. The following learning prerequisites and associated factors were identified: (1) management style (management supporting the group; management sharing responsibility); (2) development of know-how (systematic development of competence; rewarding for competence; organization of interaction); (3) work content (the developing aspects and comprehensiveness of work; opportunities for learning through work; the reflective nature of work); (4) teamwork (team spirit; ability to cooperate; motivation to develop); and (5) motivational factors (commitment to work and workplace community; growth motivation). (The bibliography lists 19 references. The questionnaire and a component correlation matrix are appended.) (MN)

Learning Strategies for Police Organization – Modeling Organizational Learning Prerequisites

Markku Luoma
Petri Nokelainen
Pekka Ruohotie

Research Centre for Vocational Education
University of Tampere, Finland

Introduction

Management by results and quality development has been adopted into the Finnish Police Force since the 1990's as tools for developing the organization. Quality work consists largely of improving professional competence of the staff. The police force seen as a service organization depends more on the professional skills than on the equipment. Improving knowledge and professional skills requires purposeful development activities from the management of the organization, and the atmosphere needs to be open for development. The prerequisites for improving professional competence and organizational learning are related to individual growth potential and the collective developmental prerequisites of the organization.

In this study we examine factors contributing organizational learning in police units. The research was carried out in five police department in western Finland. The research units were implementing quality improvement program in different stages. Knowledge was needed about the development prerequisites of the organization units and about the efficient strategies for implementing activities that facilitate organizational learning. We applied both traditional linear and Bayesian non-linear (Myllymaki, Silander, Tirri & Uronen, 2002) statistical modeling techniques in this study to answer the research questions.

Objectives

The objectives of the research work were (1) to study the factors affecting organizational learning, (2) find strategies to improve the prerequisites of learning and (3) to compare linear and non-linear statistical methods in the process of modeling organizational learning prerequisites. The research questions were defined, as follows:

- What kind of actions and strategies are available for organization management to improve organizational learning processes?
- What are the communal prerequisites for organizational learning?
- What kind of relation exists between factors affecting learning?
- What are the practical benefits of non-linear statistical methods based on Bayesian computation for the modeling of organizational learning prerequisites?

Theoretical framework

The basis of organizational learning is often seen to be in individual learning. An organization can create and facilitate prerequisites for the learning of its members and that in turn will improve the competence of the organization. The approach emphasizing individual learning is based on the theory of Argyris and Schön (1978). However, organizational learning should not be seen solely as the sum of individual learning. Cook and Yanow (1996) argue that the change of collective meaning structures is based on cultural processes.

An organization can be considered as the subject of learning the learning of which imitates individual cognition. The organization receives information from its environment, interprets it, and stores it in collective memory (Cohen & Bacdayan, 1996). Organizational cognition has also been considered as an inadequate starting point and even a misleading metaphor. According to this viewpoint organizational learning mechanisms are completely different from the mechanisms of individual learning. Organizational operations models, routines, and patterns of thought are formed, stored, and altered in human interaction. Organizational learning is comparable with the formation and changing of cultures. (Cook & Yanow, 1996.)

Organizational learning is based on individual and collective meaning structures as its members have shared meaning structures. Dixon (1994) refers to private, accessible, and collective meaning structures. In this article we will be using the concept of collective or intersubjective meaning structure in its broadest sense to describe both explicit and tacit meanings shared by the members of an organization or group. Meaning structures can apply to knowledge, skills, operations models, or be organizational routines in nature. Values, norms, and beliefs, on which organizational culture

is based, are also collective meaning structures in nature. Organizational learning consists of the formation and changing of these intersubjective meaning structures (Cook & Yanow 1996, 449).

Organizational learning always includes individual learning that is the basis for all learning. Organizational learning, in the strict sense of the word, however, takes place in human interaction. According to Argyris & Schön (1978) double-loop learning is a learning process that places organizational patterns of thought, beliefs, norms, and values as the focus of discussion and change. The changing of the patterns of thought requires dialogue between the members of the organization. Defensive routines can obstruct starting the dialogue leading to changes in the ways of thinking and thus, hinder double-loop learning. Interaction seldom comprises the whole organization but takes place in a group working together. Group level can be referred to as learning community or community of practice (Lave & Wenger, 1991). Thus, organizational learning can be studied on at least three different levels: individual learning, learning of a group, and learning of an organization as a whole.

Organizational knowledge and skills are partly in an explicit and partly in a tacit form (Polanyi, 1967). The transference of knowledge takes place between these forms of information. The different forms of information transfer are, as follows: 1) socialization (information is transferred from tacit to tacit), 2) externalization (from tacit to explicit), 3) combination (from explicit to explicit), and 4) internalization (from explicit to tacit) (Nonaka & Takeuchi, 1995).

In addition to individual memories and actual stores of knowledge information is stored in organizational culture, transformations, structures, and physical environment (ecology) (Walsh & Ungson, 1997). Meaning structures, formed during operation and interaction, are stored or sedimented in organizational routines, language, practice, culture, and identity (Tuomi 1999, 299). Organizational stores of knowledge on the level of community of practice include, among others, praxis, tools, stories, metaphors, and systems of concepts, and on the level of the organization as a whole culture, customs, language, and institutions (Tuomi 1999, 351).

The prerequisites of organizational learning consist of learning supportive culture, structures, organizational policies, and resources (Leithwood et al., 1999, 182-188). Leithwood examines the prerequisites of organizational learning in eight dimensions: (1) identifying and articulating a vision, (2) fostering the acceptance of group goals, (3) conveying high performance expectations, (4) providing appropriate models, (5) providing individualized support, (6) providing intellectual stimulation, (7) building a productive school culture, and (8) building structures that enhance participation in decisions.

On the group level it is important to master group processes in order to ensure functional group reflection. This requires interaction-based problem solving during which all the members' ideas are processed and healthy discussion facilitates decision-making based on well-researched alternatives (Leithwood et al. 1999, 174-179).

Factors contributing to growth-oriented atmosphere (Ruohotie, Nokelainen & Tirri, 2002) have been divided into four dimensions: (1) support and rewards from the management, (2) the incentive value of the job itself, (3) the operational capacity of the team, and (4) work related stress. Each dimension can be divided into smaller factors as follows:

- Management and leaders face such challenges as how to develop and reward learning, how to empower people, how to support development of professional identity, create careers based on interaction, set coals for learning and how to plan development, evaluate learning and its development and how to create commitment to the job and the organization.
- The incentive value or the developing nature of the job consists of developmental challenges, the employees' chances to influence, opportunities to collaborative learning and dignity of the job.
- The operational capacity of a team or a group can be defined by its members' capability to operate and learn together, by the work group cooperation and by the reputation for effectiveness.
- Work related stress as an obstacle for growth becomes apparent from role ambiguity and conflicts, too heavy mental load or demand for continuous alterations.

Figure 1 presents the theoretical concepts of growth-oriented atmosphere (Ruohotie, 2000).

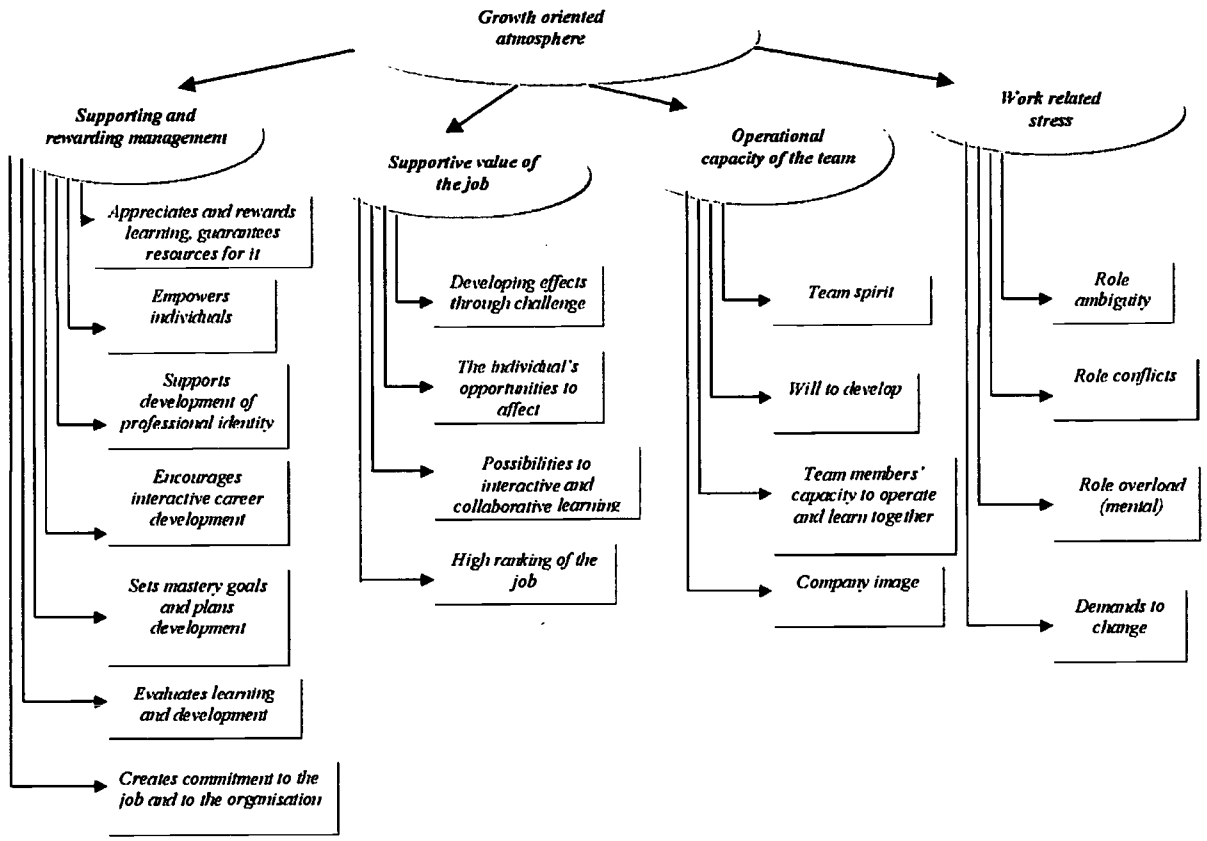


Figure 1. Theoretical concepts of growth-oriented atmosphere (Ruohotie, 2000).

Data

The data was collected from the staff of five police departments (N=281, 74.9 % of total population) in western Finland. Forty-two percent of the respondents worked as patrolmen, 24 % as investigating officers and 34 % were in charge of other duties, such as administration and office work.

The respondents' views about organizational learning were measured with 88-item self-rated paper and pen questionnaire. Response scale varied from 1 (strongly disagree) to 5 (strongly agree). The questions dealt with management methods, development of competence, work content, teamwork, factors relating to personal motivation, and quality. The focus of this paper is on the analysis of organizational learning prerequisites.

Method

The questionnaire material was analyzed statistically by using both exploratory factor analysis and Bayesian dependency network modeling (Myllymaki et al., 2002). Bayesian approach allows researcher to build graphical network model illustrating the statistical causalities between variables, and classification model to infer the class of unclassified data. Principal component analysis and Oblimin rotation were used as methods for the factor analysis. The analysis started with 88 variables producing solution of 13 factors. Twenty variables were omitted from further analysis due to low communality or correlation (for technical details, see Ruohotie & Nokelainen, 2000, 164-169). The remaining 68 variables formed a distinct factorial structure illustrating the dimensions of organizational learning prerequisites.

Bayesian methods have two major benefits in this study over traditional statistic techniques. The first benefit is the ability to analyze almost any kind of data: there is no 'invalid' or 'incomplete' data for Bayesian modeling when at least two cases exist. The second benefit is that Bayesian probability theory allows us to produce naïve causal relationships between variables. Comparing pretensions issued on data between Bayesian and traditional techniques is easy due to fact that former has very few, but latter has more than enough. When testing if data is applicable for traditional techniques we must be very careful; for example many traditional multivariate techniques are dependent on Pearson product moment correlation that requires linear relationship between variables.

Results

Principal component analysis

The principal component analysis resulted a 13-component solution with 68% total variance explained (see Appendix for component loadings and correlation matrix). Factors were organized, according to theoretical framework, into five organizational learning prerequisites (Table 1).

Table 1. Prerequisites for organizational learning

Prerequisites	Factors
D1. Management style	1. Management supporting the group 2. Management sharing responsibility
D2. Development of know-how	3. Systematic development of competence 4. Rewarding for competence 5. Organization of interaction
D3. Work content	6. The developing aspects and comprehensiveness of work 7. Opportunities for learning through work 8. The reflective nature of work
D4. Teamwork	9. Team spirit 10. Ability to co-operate 11. Motivation to develop
D5. Motivational factors	12. Commitment to work and workplace community 13. Growth motivation

Management style area consists of two factors: management supporting the group and management sharing responsibility when making decisions.

Development of know-how area is comprised of systematic actions in training and allocation of resources for learning, rewarding practices for competence, and "organizing interaction" factor that includes organizing duties and cooperation.

On *work content* area the extent and challenge of work and opportunity to influence constituted the "developing aspects and comprehensiveness of work" factor. Names of the "opportunities for learning through work" and "reflective nature of work" illustrate the contents of the factors.

Teamwork is characterized by team spirit including common goal-orientation, an ability to cooperate, and a team's motivation to develop its functioning.

Commitment and motivation to develop were measured as personal *motivational factors*.

Bayesian dependence modeling

The second stage of the analysis was to build a Bayesian network (see Heckerman, Geiger & Chickering, 1995) out of 68-item solution measuring organizational learning prerequisites. The rationale for this procedure is to examine dependencies between variables by both their visual representation and probability ratio of each dependency.

A Baycsian network is a representation of a probability distribution over a set of random variables, consisting of a directed acyclic graph (DAG), where the nodes correspond to domain variables, and the arcs define a set of independence assumptions which allow the joint probability distribution for a data vector to be factorized as a product of simple conditional probabilities. Graphical visualization of Bayesian network contains two components: (1) observed variables visualized as ellipses and (2) dependences visualized as lines between nodes. Solid lines indicate direct causal relations and dashed lines indicate dependency where it is not sure if there is a direct causal influence or latent cause. Variable is considered as independent of all other variables if there is no line attached to it. We have proved in our earlier research work that Bayesian networks are useful for explorative analysis of causal structures between observed variables (Ruohotie & Nokelainen, 2000; Nokelainen et al., 2001).

Next we compare the extracted Bayesian network and thirteen-component solution previously discovered by the principal component analysis. We evaluated 512 367 networks and competed them to find the best model. The result is presented in Figure 1 completed with boundaries marked with labels (ranging from 1 to 13) as indicators for factor membership gained from PCA previously (see Table 1).

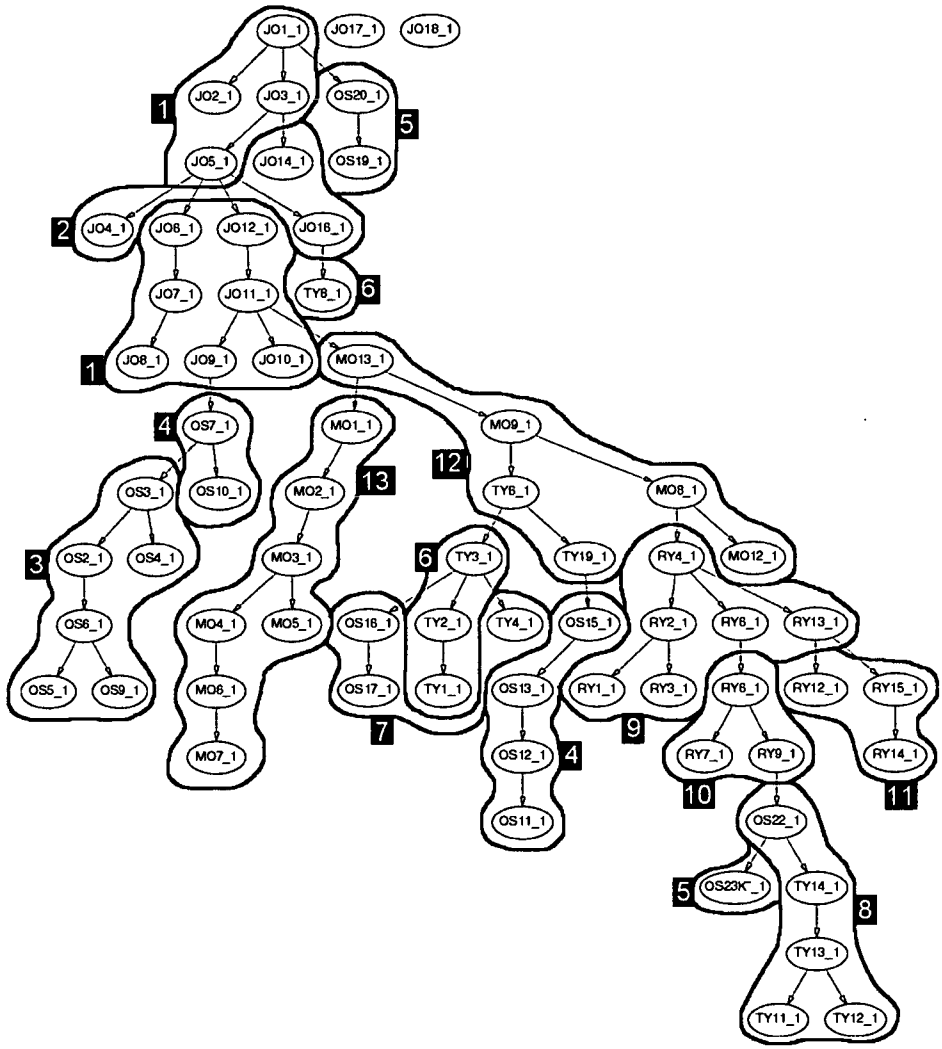


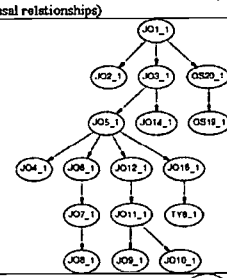
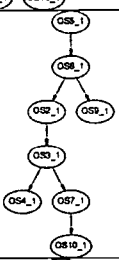
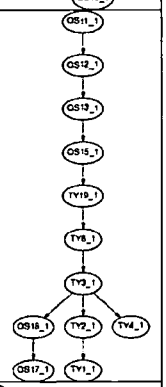
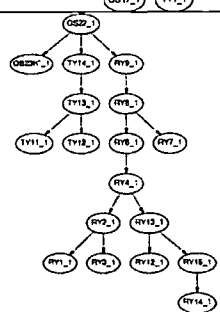
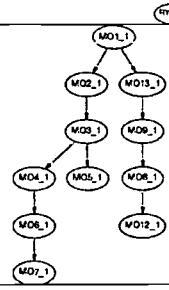
Figure 1. Bayesian network. Boundaries and labels represent factors produced by the principal component analysis.

We learn from Figure 1 that only two variables, "17. Our employees are free to search for information they need during working hours" and "18. In our workplace community one is not afraid of making mistakes but learns from them", were not related to other variables in the Bayesian network. Only three factors in Bayesian solution deviated from the factor analysis, namely "4. Rewarding for competence", "5. Organization of interaction", and "6. The developing aspects and comprehensiveness of work".

Bayesian network is a useful visual tool to support and supplement interpretation of a factor analysis. In this case we conclude that there is a viable factorial solution with less factors, i.e. the number of factors could be reduced from eight to ten. This result is in balance with findings of the PCA and supports the use of linear statistical analysis methods for this particular data set.

Next stage of the analysis is to compare the sub-structures of the dimensions found by PCA and Bayesian analysis. The latter is often called as Naive Bayes, because it "naively" assumes independent relationships between variables (Witten & Frank, 2000). In Table 2 we compare the original 13-component structure with the five dimensional Bayesian solution derived from the structure presented in Figure 1. Result is that the PCA and Bayesian network solution differ from each other quite clearly if compared by the number of dimensions.

Table 2. The results of principal component analysis and Bayesian dependency modeling.

DIMENSION	SELECTED VARIABLES			
	PCA (Variables ordered by factorial loadings)			B-Course (Variable structure ordered by naive causal relationships)
D1. Management method	F1	F2		
	JO6_1 JO7_1 JO8_1 JO5_1 JO10_1 JO12_1 JO3_1 JO1_1 JO2_1 JO11_1 JO9_1	JO14_1 JO4_1 JO17_1 JO18_1 JO16_1		
D2. Development of know-how	F3	F4	F5	
	OS2_1 OS5_1 OS6_1 OS3_1 OS4_1 OS9_1	OS12_1 OS11_1 OS13_1 OS15_1 OS10_1 OS7_1	OS23_1 OS19_1 OS20_1	
D3. Work content	F6	F7	F8	
	TY2_1 TY1_1 TY3_1 TY8_1	TY4_1 OS17_1 OS16_1	TY13_1TY14_1 OS22_1 TY11_1 TY12_1	
D4. Teamwork	F9	F10	F11	
	RY2_1 RY1_1 RY3_1 RY4_1 RY6_1 RY13_1	RY7_1 RY8_1 RY9_1	RY14_1 RY12_1 RY15_1	
D5. Motivational factors	F12	F13		
	MO9_1 MO12_1 MO8_1 MO13_1 TY6_1 TY19_1	MO4_1MO3_1 MO6_1 MO7_1 MO1_1 MO5_1 MO2_1		

Finally, we investigate the second dimension, "Development of know-how", to interpret relationships between variables (see Table 2 for the picture of variable cluster). Operationalization is done with the following propositions: (OS2_1) "*Our organization arranges further training for the staff to improve their professional competence*", (OS5_1) "*Our organization arranges in-house training regularly*", (OS6_1) "*Our staff's competence is developed according to a specific plan*", (OS3_1) "*This unit shows an active interest in the professional development of the staff*", (OS4_1) "*We have an access to the newest professional literature and information in the field*", (OS9_1) "*The year plan of our unit*

includes objectives for the development of competence", (OS10_1) "*Improvement in my competence is assessed regularly*", and (OS7_1) "*I have been given clear objectives for the development of professional competence*".

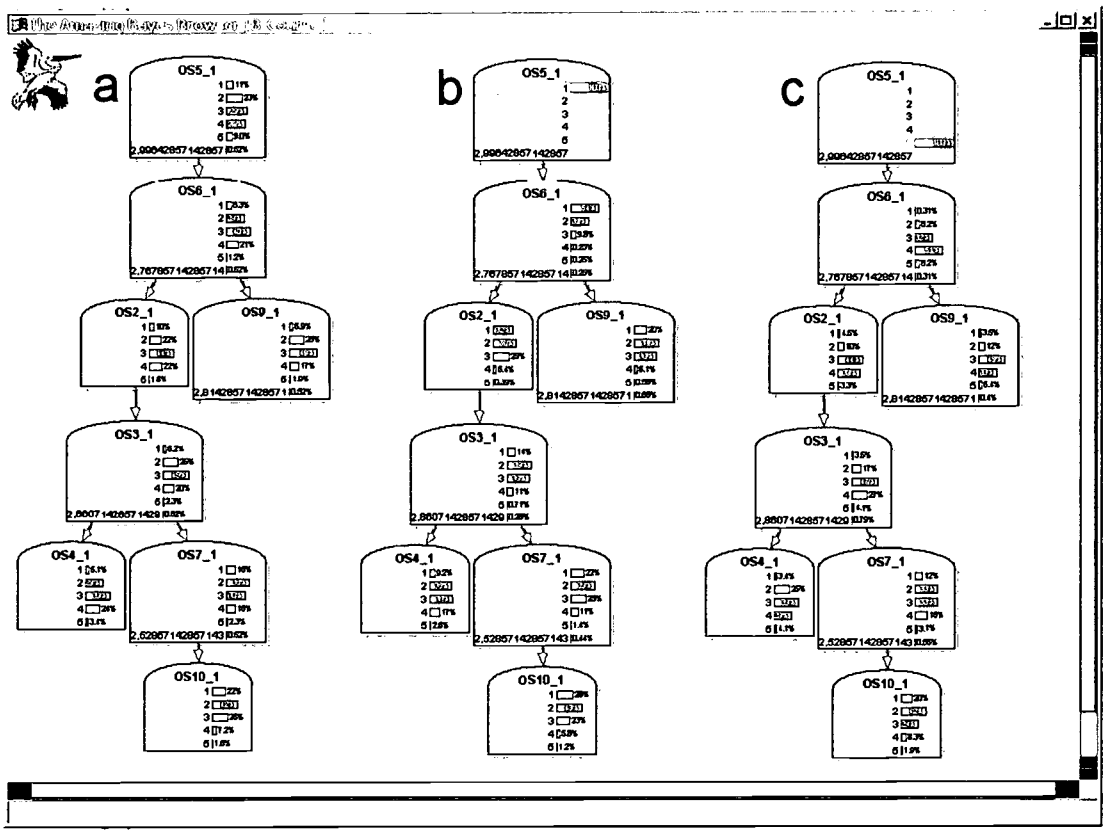


Figure 2. Dimension "Development of know-how" in (a) initialized mode, (b) "*Our organization arranges in-house training regularly*" variable fixed to negative and (c) positive value.

Figure 2 represents variable cluster "Development of know-how" in (a) initialized mode and variable (OS5_1) fixed to values (c) "*Our organization arranges in-house training regularly*" and (b) "*Our organization does not arrange in-house training regularly*". We see that the change in the fixed variable has the most dramatic effect on variables (OS6_1) "*Our staff's competence is developed according to a specific plan*", (OS2_1) "*Our organization arranges further training for the staff to improve their professional competence*", and (OS9_1) "*The year plan of our unit includes objectives for the development of competence*". Other four variables in that cluster are not intensively affected because there is no direct relationship to the fixed variable.

Conclusions

The results of this study give information about prerequisites of organizational learning. The respondents represent different types of on-the-job learners with their own interests. The empirical results show some of these preferences that can be applied in developing organizational learning strategies.

On the basis of this study one is able to discover a number of ways for the management to generate and facilitate organizational learning. We can distinguish two different viewpoints: the prerequisites of learning and the activities by which the management can purposeful promote learning. The findings and modeling of the learning prerequisites create the basis for uncovering means and measures for development activities. These features can be named as organizational learning strategies. The strategies were divided into four main groups as follows:

A. Identification of the goals

The identification and clear articulation of visions, goals, and objectives form a basis for organizational learning prerequisites. It is perhaps the most important responsibility of the management. Many theorists in the field of

organizational learning emphasize the importance of common meaning structures. Senge (1990) presents "shared vision" as one of the five "disciplines" of learning organization. Through commonly accepted goals the management is able to create visions in interaction and build shared meaning structures. Shared values can support continuing development, learning, and high performance expectations. (Leithwood et al., 1999.) In this study the significance of creating common vision was not, however, studied empirically.

B. Developing culture and atmosphere

The research pointed out the importance of the management climate and the operational capacity of the team. For the aim of creating and changing collective meaning structures the management has a variety of means to improve group interaction: to develop group or team structure, to encourage interactive processes, and to share responsibility. The Bayesian network confirmed the relationships between management dimensions, group interaction and motivational factors. Organizational learning takes place where interactive practices and development motivation intersect. We can outline two strategies for the management in developing organizational atmosphere: (1) *Supporting team interaction* by constructing team structures, interaction-based processes, management methods, and culture that makes reflection, dialogue, and developing operations models as a part of everyday life. (2) *Sharing power of decision.* Participation in decision-making and decentralization of responsibility are central characteristics of this strategy. An improvement in commitment and empowerment requires changing structures as enabling participation. Realization of empowerment requires possibilities to influence in decision-making and power to plan and determine one's own workflow.

C. Educational strategies

Systematic development of competence means providing resources for individual learning, spreading best practices, and efficiently communicating explicit and tacit information between individuals and groups. In the development of educational strategies one needs to pay attention to the storing of organizational knowledge on various levels in both official stores of knowledge and cultural practices. From the point of view of efficient organizational learning some crucial perceptions need to be given consideration to: (1) Individual learning alone is not enough but collective meaning structures, beliefs, norms and values must be touched. (2) The context of the work must be taken into account so that the training has effects on work-related skills and operations models. (3) Organizational learning is not only mediating information from teacher to learners but active construction and change of collective meaning structures. (4) A training program, if effective, has a permanent impact on peoples' interaction practices.

D. Feedback practices

Modeling organizational learning prerequisites confirmed the importance of feedback and rewarding. In developing feedback practices an eye needs to be kept on four main features: (1) Measuring of the results and a feedback system should be part of the formation of visions and definition of goals. (2) Feedback and rewarding for competence and development require an active follow-up system of results. (3) Management method should incorporate feedback and rewarding practices and (4) the organization culture should develop into supportive for the practice of rewarding.

Importance of the study

The results of the study have both theoretical and practical value showing that both traditional factor and Bayesian analysis can guide the theory building in this domain. Bayesian networks provide new possibilities for educational researcher to confirm theoretical models and - in addition to traditional factor analysis – allow him/her to generate and test theoretical scenarios with different data sets.

The results give information about prerequisites of organizational learning and about relationships between different factors. The connections between management style, development activities, and reflective practices of the group were confirmed. Formation of the picture on main areas of learning prerequisites became more structured.

Outlining the learning strategies gives possibilities for the managers to promote organizational learning in a comprehensive and practical way. The strategies are based on both empirical research and theoretical analysis about the factors contributing to learning.

Albeit the research was accomplished in police organization, the results can be applied to various types of organizations. The respondents represent different types of on-the-job learners with their own interests. The empirical results show some of these preferences that can be applied in developing organizations. The foremost application takes place in development of the quality of police organization in Finland but the design of the study was not bound to a particular context.

References

Argyris, C., & Schön, D. A. (1978). *Organizational Learning: A Theory of Action Perspective.* Reading, Massachusetts: Addison-Wesley Publishing Company.

Cohen, M. D., & Bacdayan, P. (1996). *Organizational routines are stored as procedural memory: Evidence from a laboratory study.* In M. Cohen & L. Sproull (Eds.), *Organizational learning.* Thousand Oaks, CA: Sage Publications.

Cook, S. D., & Yanow, D. (1996). *Culture and organizational learning.* In M. Cohen & L. Sproull (Eds.), *Organizational learning.* Thousand Oaks, CA: Sage Publications.

Dixon, N. (1994). *The organizational learning cycle. How we can learn collectively.* Developing organizations series. London: McGraw-Hill.

Heckerman, D., Geiger, D, & Chickering, D. (1995). Learning Bayesian networks: The combination of knowledge and statistical data. *Machine Learning 20*(3), 197-243.

Kolb, D. A. (1984). *Experiential Learning. Experience as the source of learning and development.* Englewood Cliffs, New Jersey: Prentice Hall, Inc.

Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation.* Cambridge: Cambridge University Press.

Leithwood, K., Janzi, D., & Steinbach, R. (1999). *Changing Leadership For Changing Times.* Buckingham: Open University Press.

Myllymaki, P., Silander, T., Tirri, H., & Uronen, P. (2002). B-Course: A Web-Based Tool for Bayesian and Causal Data Analysis. *International Journal on Artificial Intelligence Tools, 11*(3), 369-387.

Nokelainen, P., Silander, T., Tirri, H., Nevgi, A., & Tirri, K. (2001). Modeling students' views on the advantages of web-based learning with Bayesian networks. In H. Ruokamo, O. Nykänen, S. Pohjolainen, and P. Hietala (Eds.), *Proceedings of the Tenth International PEG Conference: Intelligent Computer and Communications Technology - Learning in On-Line Communities*, (pp. 101-108).

Nonaka, I., & Takeuchi, H. (1995). *The Knowledge Creating Company.* New York: Oxford University Press.

Polanyi, M. (1967). *The Tacit Dimension.* New York: Anchor.

Ruohotie, P. (2000). Some Instructional Issues of Lifelong Learning. In B. Beairsto & P. Ruohotie (Eds.), *Empowering Teachers as Life-long Learners* (pp. 5-29). Saarijärvi: Research Centre for Vocational Education, University of Tampere.

Ruohotie, P., & Nokelainen, P. (2000). Modern Modeling of Student Motivation and Self-Regulated Learning. In P. Pintrich & P. Ruohotie (Eds.), *Conative Constructs and Self-Regulated Learning*, (pp. 167 – 206). Saarijärvi: Research Centre for Vocational Education, University of Tampere.

Ruohotie, P., Nokelainen, P., & Tirri, H. (2002, April). Visualization of Growth-oriented Atmosphere. *A paper presented at the Annual Meeting of American Educational Research Association*, New Orleans, USA.

Senge, P. (1990). *The Fifth Discipline. The Art and Practice of The Learning Organization.* London: Century Business.

Tuomi, I. (1999). *Corporate Knowledge. Theory and Practice of Intelligent Organizations.* Helsinki: Metaxis.

Walsh, J. P., & Ungson, G. R. (1997). *Organizational Memory.* In L. Prusak (Ed.), *Knowledge in Organizations.* Boston: Butterworth-Heinemann.

Witten, I., & Frank, E. (2000). *Data Mining.* San Fransisco: Morgan Kaufmann.

Appendix

The questionnaire ordered by thirteen-component solution (PCA, Oblimin with Kaiser Normalization)

Factor 1: Management supporting the group		
JO 6	My superior asks the members of the work group for their opinions and ideas.	.756
JO 7	My superior calls up the members of the work group, presents the problems to be solved, and works together with the group to find a solution.	.744
JO 8	My superior presents the needs, goals, and ideas of the work group to his/her superior.	.704
JO 5	My superior responds to my suggestions and wishes.	.561
JO 10	Changes in work arrangements are always based on common discussion.	.545
JO 12	Employees are encouraged to participate in operational planning.	.535
JO 3	My superior is friendly and easily approachable.	.498
JO 1	In this unit superiors are interested in the wellbeing and general contentment of the staff.	.474
JO 2	We try to improve the working conditions in this unit.	.467
JO 11	We strive to meet our goals because we have defined them together.	.466
JO 9	I have defined the goals for my work together with my superior.	.406
Factor 2: Management sharing responsibility		
JO 14	My superior has confidence in his/her subordinates and allows them to work independently.	.652
JO 4	My superior shares responsibility with his/her subordinates.	.596
JO 17	Our employees are free to search for information they need during working hours.	.586
JO 18	In our workplace community one is not afraid of making mistakes but learns from them.	.476
JO 16	We have an opportunity to apply our ideas in practice.	.418
Factor 3: Systematic development of know-how		
OS 2	Our organization arranges further training for the staff to improve their professional competence.	.820
OS 5	Our organization arranges in-house training regularly.	.813
OS 6	Our staff's know-how is developed according to a specific plan.	.774
OS 3	This unit shows an active interest in the professional development of the staff.	.612
OS 4	We have an access to the newest professional literature and information in the field.	.564
OS 9	The year plan of our unit includes objectives for the development of know-how.	.552
Factor 4: Rewarding for competence		
OS 12	Our organization rewards the staff for professional competence and know-how.	.833
OS 11	My career prospects depend on the development of my competence.	.788
OS 13	The members of the staff are given more responsibility as their competence improves.	.726
OS 15	One gets rewarded for performing demanding tasks well in my workplace community.	.575
OS 10	Improvement in my competence is assessed regularly.	.571
OS 7	I have been given clear objectives for the development of professional competence.	.426
Factor 5: Organization of interaction		
OS 23	It is better not to question established practice in my unit.	-.581
OS 19	The duties are well organized at my workplace.	-.541
OS 20	Our organization values co-operation between employees.	-.446
Factor 6: The developing aspects and comprehensiveness of work		
TY 2	I am given responsibility for whole entities of work (i.e. to complete tasks from beginning to end).	.875
TY 1	I am free to work independently (e.g. to draw up work schedules, choose appropriate working methods, and set objectives for the work).	.853
TY 3	I am able to fully apply my know-how at work.	.598
TY 8	I am able to influence the decisions related to my work or work environment.	.413

Factor 7: Opportunities for learning through work		
TY 4	My work contains variable tasks.	-.533
OS 17	My work provides me with opportunities to learn new things and improve myself.	-.503
OS 16	I am able to apply my knowledge and skills at work.	-.489
Factor 8: The reflective nature of work		
TY 13	We solve work-related problems together through common discussion.	.769
TY 14	We counsel and guide other employees with work tasks.	.752
OS 22	In my unit it is natural to ask help from your colleagues.	.677
TY 11	I am able to exchange work-related experiences and opinions with other employees.	.580
TY 12	We are used to assessing and analyzing our work performances together as a way of learning.	.521
Factor 9: Team spirit		
RY 2	My work group feels responsible for meeting the set objectives.	-.749
RY 1	Members of my work group emphasize the common goals of the group.	-.713
RY 3	Members of my work group maintain high performance expectations.	-.692
RY 4	My work group has a strong team spirit and will to work together for common goals.	-.641
RY 6	My work group makes good decisions and solves work-related problems.	-.453
RY 13	Members of my work group want to develop the quality of operations.	-.444
Factor 10: Ability to co-operate		
RY 7	I have voice and influence on what goes on in my work group.	-.587
RY 8	Members of my work group want to listen to my problems.	-.557
RY 9	Members of my work group help me when needed.	-.472
Factor 11: Motivation to develop		
RY 14	Members of my work group make suggestions for in-house training.	.777
RY 12	Members of my work group bring up new ideas for solving work-related problems.	.496
RY 15	Developing our operations is a continuous challenge for our work group.	.487
Factor 12: Commitment to work and workplace community		
MO 9	I want to do my work; I find it fulfilling.	-.734
MO 12	I do not want to change my job.	-.656
MO 8	I enjoy my present job.	-.649
MO 13	I find organizational goals important so I take an interest in them.	-.543
TY 6	I get satisfaction from my work.	-.469
TY 19	I feel that my work is valued.	-.447
Factor 13: Motivation to grow		
MO 4	I am interested in further training in case it improves my chances of getting transferred to new challenging tasks.	.842
MO 3	I enjoy participating in various development programs in my workplace community (such as training, various work groups and projects, exchanging tasks, performing additional tasks, etc.).	.800
MO 6	I enjoy applying new ideas in practice.	.716
MO 7	I take an active interest in the development of my field.	.695
MO 1	Receiving more responsibility encourages me.	.690
MO 5	I have plenty of ideas for development that the organization could utilize in its operations.	.678
MO 2	I find self-improvement beneficial.	.584

The component correlation matrix

Component	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1	1,00												
2	0,11	1,00											
3	-0,25	-0,22	1,00										
4	0,21	0,14	-0,24	1,00									
5	0,32	0,16	-0,23	0,19	1,00								
6	0,36	0,11	-0,18	0,24	0,34	1,00							
7	0,19	0,14	-0,36	0,14	0,24	0,25	1,00						
8	-0,18	-0,25	0,31	-0,25	-0,23	-0,13	-0,22	1,00					
9	0,02	-0,08	0,10	-0,11	-0,02	-0,05	-0,09	0,14	1,00				
10	-0,03	-0,12	0,17	-0,11	-0,01	-0,05	-0,16	0,07	0,08	1,00			
11	0,10	0,18	-0,25	0,11	0,13	0,18	0,18	-0,17	0,04	-0,12	1,00		
12	0,30	0,15	-0,19	0,30	0,20	0,29	0,23	-0,22	-0,12	-0,13	0,11	1,00	
13	-0,20	-0,05	0,16	-0,13	-0,22	-0,14	-0,22	0,18	0,02	0,06	-0,07	-0,18	1,00

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: LEARNING STRATEGIES FOR POLICE ORGANIZATION - MODELING ORGANIZATIONAL LEARNING PREREQUISITES

Author(s): NOKELAINEN, P., LUOMA, M., & RUOHOTIE, P.

Corporate Source: UNIVERSITY OF TAMPERE, FINLAND

Publication Date: 21/04/2003

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1

☒

Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) *and* paper copy.

The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A

☐

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B

☐

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, please

Signature: RN

Printed Name/Position/Title: PETRI NOKELAINEN

Organization/Address: UNIVERSITY OF TAMPERE
TARINMAANTIE 41
14240 JANAKKALA, FINLAND

Telephone: +358 3 6870011

FAX: —

E-Mail Address: hopeno@uta.fi

Date: 22/04/2003

(Over)

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

University of Maryland
ERIC Clearinghouse on Assessment and Evaluation
1129 Shriver Lab, Bldg 075
College Park, MD 20742
Attn: Acquisitions

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

University of Maryland
ERIC Clearinghouse on Assessment and Evaluation
1129 Shriver Lab, Bldg 075
College Park, MD 20742
Attn: Acquisitions