Proceedings of 2013 International Conference on
Technology Innovation and Industrial Management
29-31 May 2013, Phuket, Thailand

TRAINING, CREATIVITY AND INNOVATION

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ABSTRACT

Purpose: *The purpose of the research is to examine the effect of a combination of training and training transfer factors on intentions to create new knowledge through stimulating creativity, experimentation and introduction of new products, services and processes in companies.*
Design/methodology/approach: *In the study we use quantitative research methods, based on data collected on a sample of 247 Slovenian service companies. To process the data, various multivariate statistical methods were used (factor analysis and multivariate regression analysis).*
Findings: *In the study we find positive effects of adequate quantity and quality of training and the training transfer factors on intentions to create new knowledge in an organisation. Among the training transfer factors the study reveals a relatively strong influence of organisational incentives (related to peer and especially supervisor support. The effect of training is positive and relatively strong.*
Research limitations/implications: *The study represents a starting point for exploring the relationship between training and processes of creation of new knowledge. To improve the reliability of the study, additional research should be undertaken using mixed research methods.*
Practical implications: *The study presents useful findings about the potentialities for encouraging creativity, experimenting and creating new knowledge required for further companies' development.*
Originality/value: *In the areas of research focused on training and training transfer factors there is not much work done related to the study of relationships between training and creativity, innovation and development of new products, services or processes. Most research has been focused on the questions how to promote learning, cognitive and behavioural changes, knowledge transfer and organisational performance. Therefore, we believe, that this study represents an original contribution to the promotion of training in an organisation as a means of enhancing creativity, innovation and new knowledge development.*

Keywords: Training, training transfer factors, knowledge creation

INTRODUCTION

In the literature there are quite some studies which investigate relationships between training, training transfer factors and different aspects of organisational performance. For example, research links training and training related factors to lower costs, reduced scrap, increased labour productivity (Cutcher-Gershenfeld, 1991; Bartel, 1994; Huselid, 1995), increased financial performance, sales, market share and profits (Russell *et al.*, 1985; Lane *et al.*, 2001;

Lyles and Salk, 2007), quality of products, reduced absenteeism and staff turnover, etc.(Guzzo *et al.*, 1985; Huselid, 1995; Katz *et al.*, 1983). The weak point of many of these studies is their focus on specific industries, allowing only a limited generalization of findings. In our previous study (Dermol and Čater, 2013) we confirmed positive links between training, peer support, supervisor support and organisational incentives and organisational performance mediated by organisational learning processes.

On the other hand, there are not so many studies relating training with knowledge transfer (Gupta and Govindarajan, 1991; Szulanski, 1996; Gupta and Govindarajan, 2000; Minbaeva *et al.*, 2003; Lyles and Salk, 2007), or creativity and innovation capabilities (Gupta and Singhal, 1993; Laursen and Foss, 2003; Minbaeva 2005). Abilities of creativity, innovation, new knowledge development and introduction of new products and services are crucial for success in modern world.

In the study presented in this paper we investigate the links between quality and volume of training, training transfer factors such as peer support, supervisor support and organisational incentives on one side and the existence of processes, related to creativity, innovation and new knowledge creation in an organisation on the other. In the first part of the paper we describe the constructs and indicate links between them, in the second part of the paper we present the research methodology and key findings of the analysis.

LEARNING CONSTRUCTS

1. Quality and volume of the training

Training is defined as the systematic development of skills that individuals need to perform certain work (Miglič, 2002). Individuals should take their own responsibility for their professional development but realise their learning needs in partnership with their colleagues at work and their direct superiors using different learning methods (Torrington *et al.*, 2008). Armstrong (2003) and Torrington *et al.* (2008) identify a range of different approaches to training. They state that the training may be based on different methods of teaching – both off-job methods (formal education, consultancy courses, outdoor-type courses, in-house courses, dramas and improvisations, role-plays, simulations etc.) as well as on-the-job learning methods (instructions, mentoring, self-development, self-development teams, the use of learning logs and learning contracts, e-learning, blended learning etc.).

Dechawatanapaisal and Siengthai (2006) consider that adequate opportunities for training should be offered to the employees. Garvin *et al.* (2008) say as well that all the employees in an organisation should receive periodic training. In particular, they highlight the importance of training for new employees and training in cases of special events in the organisation and emphasise the need to train employees when new business or work initiatives emerge, as well as in cases of employees' transfer to other posts or changes to the content of existing jobs. Jarvis *et al.* (2006) consider that in the past was mostly the upper levels of organizational hierarchies benefited from the training, but the situation in the last 50 years has changed. Blandy *et al.* (2000), for example, reported that the majority of organisations train 80-85% of their employees.

The quality training might be defined as customer focused, with high quality of service, controlling the process quality and with evaluation of quality (Burgarelly *et al*., 2002). The CEDEFOP (1996) notes that the quality of training reflects the quality of service, user satisfaction, quality of processes, the achievement of quality standards as well as the proper relationship between quality and price. Seyfried (1998) associates training quality with the implementation of quality objectives and with meeting standards when performing learning processes. Council of Europe (2005) emphasises that the training should address useful contents that could be used in practice. In addition to technical knowledge and technical skills training should provide some emotional skills needed to perform specific type of work as well. The quality of orientation training for new employees is determined by a clear set of learning objectives, appropriate teaching methods, integration of practical experience, relevance of learning tools, professionalism of trainers and the existence of training evaluation.

2. Supervisor support

Support provided by employees' supervisors significantly and positively affects transfer of training to a specific work context. Campbell (1969), for instance, emphasises the importance of adequate leadership styles. Bader and Bloom (1995), from practical perspectives, emphasise the need for supervisors' active participation in the processes of planning and preparation of the training. Some other authors Wieland Handy (2008) note that supervisors should promote the training transfer by explaining their employees the expectations about after-training behaviour and performance, helping them to identify opportunities to implement the newly acquired knowledge and providing information that might be helpful to their employees. Furthermore, any help offered by supervisors seems to be of a crucial importance when employees encounter problems while using the acquired knowledge.

3. Peer support

Support provided by the peers, co-workers or colleagues at work is another significant factor influencing the training transfer. It is reflected mainly through joint identification and implementation of learning opportunities and application of the acquired knowledge. Wieland Handy (2008) emphasises the need for appropriate norms within the group which involve the whole group in the learning process. Peers should play an important role in explaining and promoting learning in an organisation being patient while their colleagues are trying to implement the newly acquired knowledge in the workplace and providing the colleagues with the assistance when they need one. They have the power to promote and also to prevent the transfer of training (Holton III *et al.,* 2003).

4. Organisational incentives

Holton III *et al.* (2003) acknowledge the existence of certain organisational mechanisms which enable organisations to promote training transfer. These mechanisms comply with the factors acknowledged by Herzberg's motivation theory (Lipičnik and Možina, 1993). Among these mechanisms there are certain factors which create conditions for training transfer or/and eliminate eventual inconveniences and obstacles. On the other hand there are some factors which promote training transfer as well.

Among factors which eliminate possible inconveniences and create conditions for the training transfer some of them are related to work conditions, others to control mechanisms or mechanisms which enable feedback of information regarding performance and training transfer. Garvin *et al.* (2008) for instance emphasise the importance of adequate financial support after the training and also providing material, equipment and information which is needed for successful training transfer.
If employees on the other hand perceive training as an opportunity to increase their efficiency and personal satisfaction and align training with possibilities to gain more respect among colleagues, higher salary or other benefits, promotions and opportunity to climb up the career leader, the probability of successful training transfer is even higher. This is particularly true if organisations provide them with adequate resources and budget available (Wieland Handy, 2008).

KNOWLEDGE CREATION THROUGH CREATIVITY AND INNOVATION

The extent of creativity and experimentation leading to introduction of new products, services and processes in an organisation is positively affected by the existence of an environment which encourages learning. For example, Martins and Terblanche (2003) note that successful »organisations and leaders try to create an institutional framework in which creativity and innovation will be accepted as basic cultural norms in the midst of technological and other change«. Learning culture and appropriate managerial practices may be significant factors contributing to the extent creativity and innovations appear in an organisation (Judge *et al.*, 1997) since such culture »refers to basic assumptions [...] maintained in the continuous process of human interaction« (Martins and Terblanche, 2003) and are prescriptions for ways to perform in an organization. Martins and Terblanche (2003) recognise five crucial factors, which stimulate innovation and creativity in an organisation: strategy, structure, support mechanisms, behaviour and communication. Easterby-Smith (1990) defines experimenting organisations which generate creativity and innovation in people through the introduction of flexibility in organisational structures. Such organisations focus on unusual variations in information systems and encourage individuals to take risks (Jashapara, 2011). Kenny and Reefy (2006) recognise relationship between several cultural elements, organisation's commitment to R&D and its performance. Besides adequate resources and adequate funding, they emphasise the importance of some elements related to learning culture such as non-constraining environment, supportive management, technically competent team and appropriate strategic direction. In their research, they find a significant correlation between organisation's commitment to R&D and the number of new products and services launched. More specifically, Garvin *et al.* (2008) stress the importance of three building blocks of learning culture – supportive learning environment, leadership that reinforces learning and concrete learning processes and practices including experimentation and knowledge creation.
On the basis of described theoretical background and our believes that learning induced through learning and existence of learning transfer factors positively affects new knowledge creation in an organisation we set the following hypothesis:
Combination of training, peer support, supervisor support and organisational incentives positively influence creativity, innovation and knowledge creation in an organisation.

METHODOLOGY AND ANALYSIS

During June and July 2009 the research was carried out to measure the influences of training and training transfer factors on creation of new knowledge and introduction of new products, services and processes through stimulating creativity, experimentation and innovation. Questionnaires were sent to 1819 service organisations in Slovenia (548 large, 703 medium-sized and 568 small) located in Slovenia. We received 247 completed questionnaires (19 % from large organisations, 39 % from medium-sized and 39 % from small ones). The responsiveness was 13.6 %.

The questionnaire was developed as a combination of measurement scales found in respective literature as indicated in Table 1.

Table 1: Measurement scales (examples, number of items, authors)

Knowledge creation (KNCR) (e.g. we experiment frequently with new ways of working; we practice brainstorming retreats or camps)	4	Garvin *et al*, 2008
	2	Wang *et al.* (2007)
Volume and quality of training (TRAING) (e.g. training is of high quality, training is constantly revised and upgraded to fit the changing environment, experienced employees receive periodic training and training updates, experienced employees receive training when new initiatives are launched)	4	Dechawatanapaisal and Siengthai (2006)
	1	Vlachos (2008)
	4	Garvin *et al.* (2008)
	2	Young-Chan and Sun-Kyu (2007)
Supervisor support (SPRVSR) (e.g. supervisors show interest in what employees learn in training, supervisors meet with employees to discuss ways to apply their training to the job, supervisors meet with employees to work on problems they may have in trying to use their training)	1	Vlachos (2008) Garvin *et al.* (2008) Young-Chan and Sun-Kyu (2007)
Peer support (PEER) (e.g. employees appreciate colleagues using new skills they have learned in training, employees encourage their colleagues to use the skills they have learned in training, employees expect colleagues to use what they learn in training at work.	4	
Organisational incentives (INCENT) (e.g. when employees try new things they have learned, they know who is going to help them, when employees in this organisation do not use their training it gets noticed, after training employees get feedback from people on how well they are applying what they have learned)	2	

In the statistical analysis we follow the procedure suggested by, for example, Sakar *et al.* (2011). The relationship between the independent and dependent variables were examined by conducting exploratory factor analysis and multiple linear regression analyses. Firstly, factor analysis was implemented to calculate factor scores which were then entered into the multiple linear regression analysis as independent variables. Besides, the approach suggested by

Huselid (1995) and Minbaeva (2005) was used as well. This way we tried to recognise possible complementarities between the independent variables, i.e. possible synergetic effects of combinations of training and training transfer factors on creativity, innovation and new knowledge creation in an organisation.

As it can be seen in the Table 2, all the dependent variables positively influence creation of new knowledge in an organisation. The strongest effect seems to come from organisational incentives and from delivering trainings in an organisation. Peer support seems to have medium sized and positive effect on new knowledge creation, on the other hand, the influence of supervisor support seems to be relatively weak, nevertheless, statistically significant.

To test complementarities Huselid (1995) and Minbaeva (2005) suggest using multiplicative approach and testing a full set of interactions while controlling for main effect of individual independent variables. The analysis (see Table 2, model 2) indicates that complementarity exists between supervisor support and organisational incentives, but the interaction between these two variables is negative, meaning that the simultaneous operation of these two factors adversely affects the creation of new knowledge.

Table 2: Regression analysis

Model		Beta	Std. Error
1	(Constant)	4.122***	0.062
	TRAING	0.385***	0.067
	PEER	0.255***	0.067
	INCENT	0.407***	0.069
	SPRVSR	0.153**	0.070
	F value	52.52***	
	R-square	0.465	
	Adjusted R-square	0.456	
2	(Constant)	4.129***	0.062
	TRAING	0.414***	0.073
	PEER	0.271***	0.071
	INCENT	0.395***	0.070
	SPRVSR	0.136**	0.074
	TRAING x SPRVSR	0.014	0.068
	TRAING x INCENT	-0.027	0.076
	TRAING x PEER	0.074	0.066
	SPRVSR x INCENT	-0.105*	0.076
	SPRVSR x PEER	-0.023	0.074
	INCENT x PEER	0.076	0.055
	F value	22.19***	
	R-square	0.485	
	Adjusted R-square	0.463	

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

CONCLUSIONS

The study highlights the importance of training and introduction of systematic organisational incentives for encouraging creation of new knowledge through creativity in experimentation. Peer support and especially supervisor support are not as important factors as one might think but nevertheless they have a positive effect on knowledge creation. In an organisation managers should therefore in the first place encourage systematic training and also take care of conditions for training and training transfer, especially by promoting training transfer processes and eliminating potential inconveniences and obstacles for learning.

The findings of the study are somehow in line with the findings in literature related to social networking issues which link network density and strong ties characterised by frequent communication and emotional closeness with effective inter-firm cooperation but not with knowledge creating and innovation capability. It seems that only the existence of network heterogeneity and weak ties between individuals across social units are predecessor of knowledge creating or innovation capability in an organisation (Swart, 2006). This might be the reason for rather weak relationship between creation of knowledge on one side and peer support and supervisor support on the other, as the data showed in our study. The training seems to be an opportunity to establish weak ties with external sources of knowledge, and to increase the heterogeneity of the organisation's social network. Besides, the study shows that simultaneous implementation of organisational incentives in the sense of provision of material, equipment, information, financial support and feedback needed for a successful transfer of training into the work context, and supervisor support in the sense of explanation of expectations about post-training behaviour, joint identification of learning opportunities, and provision of information that is helpful to employees, adversely affects the creation of new knowledge. This is another issue which the managers should be aware of. Too much of formalisation in this sense harm the processes of knowledge creation.

The study represents the starting point for investigation the relationships between training, training transfer factors, creativity and innovation. It is based on a sample of 247 Slovenian services companies and on qualitative research approach. We believe that the study might be improved especially in two ways – through bigger sample which would enable cross validation of the model and through the use of complementary qualitative and quantitative research methods.

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