

The influence of collaboration and self-regulated learning services on the motivation to learn at the workplace

Teresa Holocher-Ertl¹, Claudia Magdalena Fabian¹

ZSI – Centre for Social Innovation, Vienna, Austria
{holocher, fabian}@zsi.at

Abstract. Motivating workplace learners to actively getting involved in learning and sharing knowledge with their colleagues is still a challenging task for researchers and educational designers. In this paper we present results from the two-months evaluation of the IntelLEO motivational concept, investigating the role of ICT-supported collaboration and self-regulated learning activities on the motivation and self-efficacy for learning and knowledge building of workplace learners. This motivational concept was evaluated in three different business cases involving 59 participants.

Keywords: workplace learning, collaboration, self-regulation, motivation, self-efficacy

1 Introduction

Learning at the workplace and social learning on ICT-enabled work-communities is foreseen to become the dominant source of education in areas where new practical knowledge emerges rapidly and has a short lifetime [1]. But engagement in collaborative learning and knowledge building (LKB) activities at the workplace is still a big challenge for many educationists and researchers. Challenges arise on how to make the individual tacit knowledge of experts explicit and useful for other workers, how to combine it to more complex constructs that embody the organizational goals and visions, and how to shape the action and practice in organization with this accumulated knowledge. Especially in highly competitive environments motivation for an increased knowledge sharing is an important challenge, as people might feel reluctant to give away too much of their tacit knowledge [2].

One model that explains organizational knowledge management from individuals' and organizations' perspective is the knowledge conversion model (also called SECI- model) from Nonaka and Takeuchi [3]. This model has been used to explain how to dynamically update organizational knowledge using organization members experiences, but it does not integrate the issues of motivation for learning and knowledge- building (LKB) in the workplace.

In IntelLEO, a research project of the 7th Framework program, we aimed to increase motivation for LKB within and across organizational borders through innovative tools and procedures [4]. With this aim, the research team took the approach to adapt the SECI model [3] into the projects' "pedagogic and motivational model".

2 The IntelLEO motivational model

To integrate motivation for learning and knowledge-building into the SECI model, IntelLEO decided to focus on two aspects, and integrate them in the original SECI phases: 1) Support of self-regulated learners [5], and 2) Support of collaboration and social and organizational embeddedness. We understand our adapted knowledge conversion model as an approach, which integrates and fosters:

Ad 1) Support of self-regulated achievement of learning and performance goals: The planning of one's competence development and self-regulated learning from others are activities that are covered in the model's internalization phase [17], while self-regulated reflecting, documenting and bringing evidence of competence development are supported in the externalization phase (see the dots squares in Figure 1).

Ad2) Support of collaboration and social and organizational embeddedness: The strengthening of the community as a source of motivation will support learning and knowledge sharing activities in all SECI-phases. Pro-social goals, feeling of relatedness, collaborative discussion and enhancement of learning objects, support and tutoring for increased self-efficacy are highly relevant factors to motivate people for non-intrinsically motivated tasks. Additional this cluster fosters the social embeddedness of learners into the goals, norms and visions of organizations.

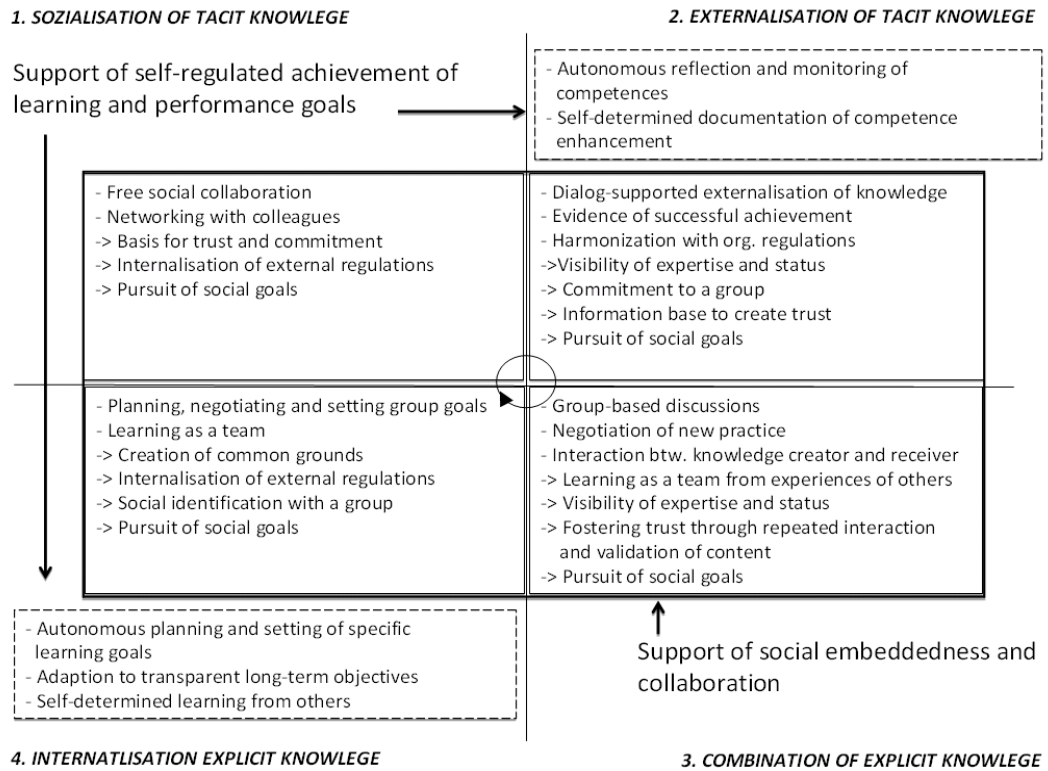


Fig. 1. The IntelLEO motivational model

A more detailed introduction into the IntelLEO pedagogic and motivational model was presented at the last MATEL 2011 workshop [6].

In this workshop we want to present the results from the two-months evaluation of this model in three different Business Cases involving 59 participants from industry and research organisations.

3 Evaluation of the motivational model

The IntelLEO pedagogic and motivational model was evaluated during a testing period of two months with employees in three

Business Cases (BCs). The testing took place between October 2011 and January 2012. All 59 test-participants were provided with a set of learning services, which supported self-regulated and collaborative learning at the workplace during this testing period, while the scenarios for the usage of these services were adapted to the specific needs and requirements of each BC.

The testing phase started with an initial training session for the test-participants, where the services were introduced and pre-evaluation questionnaire distributed to the employees. After the two-months testing period, the evaluation was concluded with a post-evaluation questionnaire and two focus groups per BC to investigate the experiences of participants in more detail. In addition the facilitators and representatives of the management were invited for expert interviews to provide feedback regarding the organizational point of view on the IntelLEO learning services and pedagogic concept. The data from the questionnaires were used to investigate the participant's attitudes towards learning and knowledge-sharing, as well as their motivation and self-efficacy towards self-regulated and collaborative learning at the workplace. A pre- and post-data comparison tried to find out in how far the two-months testing period changed these attitudes and motivational aspects of participants. Correlation analysis tried to answer in how far positive attitudes towards learning and knowledge sharing related to a high motivation and self-efficacy perception of learners. The focus group discussions gave more insights into the motivators and barriers of using the learning services in the different organizational contexts and thus provided a better understanding of factors influencing collaborative, self-regulated learning at the workplace. Besides this, open questions for future research projects were derived. The expert interviews provided more insights in determining aspects of the implementation of the IntelLEO learning services and pedagogic concept in the organisational environment and culture and complemented the evaluation from the organisational perspective.

4 First results from the evaluation

In this chapter we will highlight some of the outcomes of the evaluation, which will be presented and discussed in more detail at the MATEL Workshop 2012:

The results show the importance of collaboration services for an increased motivation for learning and knowledge building (LKB) activities, but results have to be interpreted carefully due to the limited number of 59 participants and the prototypical state of the IntelLEO services. The participants who got involved in collaboration activities often were amongst the most motivated for LKB and showed also the highest self-efficacy for LKB. This result was confirmed by the correlation analysis of post-data on learning and knowledge sharing attitudes, which highlighted the relationship between collaboration and the motivation to learn, the willingness to share knowledge and also the self-efficacy for LKB. In addition we found a strong positive correlation between the motivation to learn and self-efficacy for LKB, meaning that the more self-confident a person is with respect to learning activities the more motivated s/he is to actually learn. Thus our studies confirm outcomes from existing studies on self-efficacy and learning motivation [7][8].

The results from the IntelLEO evaluation do not allow us to clearly define the influence of self-regulated learning activities on the learners' motivation. We therefore suggest more research that specifically investigates the role of these services and its' influence on self-efficacy and motivation to learn. We found that the group of participants who used high collaboration and high self-regulated learning services were not among the most motivated ones, but the most motivated learners were those using collaboration services often and self-regulated learning services not very often. The qualitative results show that self-regulated learning activities, like understanding organisational objectives, self-reflecting, setting of learning goals, and monitoring of the learning progress, are important activities especially for self-motivation and keeping oneself on the learning track. But it might be that the participants stated on the one hand that planning and monitoring their learning progress

in harmonisation with the organisation is important and on the other hand, when it comes to really doing it, the less time spent with it the better it is. So maybe if too much time and effort are dedicated to self-regulated activities, it can be perceived as demotivating again.

The workplace learners seem to be more willing to use services that support pragmatically useful learning activities that they have to do as part of their work process. Even if they show a positive motivation towards planning competences and monitoring their learning process, the workplace learners seem to be less willing to use extra effort in the work process for computer-supported self-regulated learning activities.

Planning and monitoring of one's learning process was perceived as a means of self-control and self-motivation, and helps to make efforts visible. In the informal learning context the involved BCs using this information to control and evaluate employees from the "outside" is perceived as demotivating again. Also organisational learning objectives serve as personal orientation, but should not be used for evaluation purposes.

In contrast, the expert interviews with the management showed that self-regulated learning services are perceived as relevant from organisational point of view as they help organisations to manage the positions, roles and competences that they have and the ones it wants to achieve.

5 Summary

In this paper we present the results from the evaluation of the IntelLEO motivational model, which is based on the support of collaborative and self-regulated learning activities at the workplace. The evaluation highlighted the importance of collaboration if the motivation and self-efficacy to learn and share knowledge should be increased amongst workplace learners. The role of self-regulated learning services on the motivation to learn in a professional context could not be clearly defined yet and would need further research.

6 References

1. Tuomi, I., "The Future of Learning in the Knowledge Society: Disruptive Changes for Europe by 2020." for EC-DG Joint Research Centre/ DG Education and Culture: 1-48, 2005
2. Ardichvili, A., Page, V., Wentling, T., "Motivation and barriers to participation in virtual knowledge sharing communities of practice" *Journal of Knowledge Management* **7(1)**, 2003: 64.
3. Nonaka, I., Takeuchi, H., *The knowledge-creating company: How Japanese companies create the dynamics of innovation.* Oxford University Press, 1995.
4. D1.4 IntelLEO Public Concept,
http://intelleo.eu/uploads/tx_abdownloads/files/IntelLEO_Concept_D1.4_v20.pdf
5. Zimmerman, B. J., "A Social Cognitive View of Self-Regulated Academic Learning." *Journal of Educational Psychology* 81(3), 1989
6. Holoher-Ertl, T., Pata, K., Fabian, C.M., "How to integrate the motivation to learn into TEL enhanced organizational knowledge-management models?" *MATEL 2012 Workshop at EC-TEL, Palermo, Italy*
7. Bandura, A. (1986). "Social foundations of thought and action: A social cognitive theory." Englewood Cliffs, NJ: Prentice-Hall.
8. Montalvo, F. T., Gonzalez Torres, M.C. (2004). "Self-Regulated Learning: Current and Future Directions." *Electronic Journal of Research in Educational Psychology* 2(1): 1-34.

Acknowledgements

IntelLEO [1] "Intelligent Learning Extended Organization" is a research project supported by the ICT program of the European Commission (DG Information Society and Media, project no. 231590).

[1] <http://www.intelleo.org>