Supporting Workplace Learning through digital media: A concept to overcome the gap between work and training

Digitalization as a global phenomenon has already shown its influence on work and labour throughout the last years. While companies have to deal with different kinds of change processes that come along with digitization and digitalization, employees – as individuals – are to be prepared and supported to face these changes as well. Digitalization changes work, education and training – and the relationship between them. From educational scientists point of view, it therefore provides the ground and the objective of research. Thus, experts and researchers for continuing vocational training enhance scenarios, training courses or further programs with digital media.

Yet the objectives of continuing vocational education in Germany e.g. changed over the last few decades: Classical training like the German "Meister" still takes part in courses, without direct connection to work. The challenges lie in the combination of work and learning. Workplace learning has its great advantages when it comes to promote an appropriate way to develop competences that are necessary in a digital world: Employees have to be able to find answers to their challenges and have to estimate whether the answer is a proper solution. A rigid content orientation, that is still predominating continuing vocational education in German companies, needs to shift to a bias that encourages individual competence, experience, problem-solving skills and self-reflection.

Still, competences can only be developed where action and learning are associated. Therein work and labour need to provide structures, culture and environment that support learning processes, whereas continuing vocational education needs to describe how exactly workplace learning is to be conducted, especially when it is supported with digital media. Unfortunately, this is seldom based on adequate learning theories or solid research. Nevertheless, pragmatistic- and constructivist-oriented understandings provide models and theories that can help to promote competence development processes in workplace learning – orientated towards the learner.

The research project stands as an example, how workplace learning can be realised in continuing vocational education in Germany – based on educational models and ideas, e.g. by John Dewey and Donald A. Schön. Qualified electricians, being participants of this project, autonomously process an operational scheme that contents different kinds of work stages. Enhanced with digital media the tasks have to be documented on an e-portfolio. E-portfolios are useful tools to document and reflect on learning processes. Although there are approaches to establishing portfolios as electronic reports in education, their potential remains largely unused supporting workplace learning. The presented e-portfolio is used in order to document the informal learning processes and to enable reflection on the participants' actions, their insights and how they manage difficulties. In order to break through institutionalized educational patterns, we consider

methods of media-based documentation to be useful.

However, the deployment of the e-portfolio alone is not sufficient. The structure of the e-portfolio provides guidance for those that did not encounter informal learning and reflectional learning processes before. Especially for inexperienced learners or those with little experience in working with e-portfolios, it is necessary to integrate e.g. questions and suggestions. The genuinely personal reflection is pedagogically supported by professionals within discussions about the documented tasks. The e-portfolio likewise stands as a documentation of the competences that are developed. Referring to the concept of the Reflective Practitioner by Donald A. Schön we differentiate reflection-in-action and reflection-on-action – both covered by the e-portfolio.

The research project includes the following research questions: a) How can workplace learning in the German electronic industry be supported by digital media, when reasoned on learning theories? b) How can the transferability of competences be secured? c) How can quality assurance be used to certify workplace learning?

The evaluation of our learning concept follows the methodology of design-based-research.

Digital learning can enhance educational processes within workplace learning in order to promote self-determined, creative and socially responsible action in a digitalized world. Digital media enables autonomous and individual, as well as cooperative and social learning. Nevertheless, educational scientist and especially experts for continuing vocational education have to be aware, that a widely dissemination of digitalization comes along with risks and traps: Not every participant is able to use supplied enhancements, not every employee is able to transform work and labour into workplace learning, even if the learning processes are supported by digital media. The danger of a digital gap is imminent – those who are used to learning and working with digital media benefit of digital improvements. Those, however, who do not apply digital application, might fall back and will not profit from digitalization. Further educational research has to consider, how this gap can be closed and how digital media forms can enhance workplace learning. Furthermore, to counteract unequal access opportunities to continuing vocational education, our concept mainly addresses less educated people without an academic background.

The understanding of work changes: Work and learning are no longer separated, but rather linked. Work becomes an integral part of lifelong learning.