

Learning competence: The ability to develop competences independently as success factor for employees

Sabrina Romina Sorko
FH JOANNEUM University of Applied Sciences
Institute of Industrial Management
Graz, Austria

Christian Trattner
FH JOANNEUM University of Applied Sciences
Institute of Industrial Management
Graz, Austria

Corresponding Author: Sabrina Romina Sorko, sabrinaromina.sorko@fh-joanneum.at

Abstract

Continuous improvement are important for every company and hence also for employees. Depending on the field, being state of the art is an important issue (f.e. due to security reasons and regulations). In such cases, it is necessary that employees are proactive in training their competences and therefore ideally act independently. Not only regarding those sectors, continuous improvement is important, but also regarding personal development and career opportunities, the ability to learn and qualify one's self independently is a key factor.

This paper deals with the question of how learning competence could be defined and what advantages it entail for employers and employees. Therefore, a study was conducted, which shows the employee perspective on the topic. The results are furthermore compared to various other studies as well as current literature.

Introduction

The current technological development is mainly characterized by an increasing level of digitalization which affects nearly all life areas. New information and communication technologies are constantly entering the market, enabling close interaction between humans and machines as well as machines and products (Bauernhansl, 2014; Ramsauer, 2013; Kagermann, Wahlster & Helbig, 2013). Looking on the technical side, changes can be realized much faster and for that reason employers and employees also must be more flexible. Innovative working arrangements such as co-working spaces or remote working are replacing traditional full-time jobs and fixed job specifications (World Economic Forum, 2016). The importance of know-how is also increasing equivalently to the level of digitalization, which means that intellectual capital is gaining higher value within the company (de Vries, 2006; Stewart, 2003).

Due to that development, employees are facing a broad adjustment of their job profiles: administrative work will decrease whereas networked tasks will increase (Spath et al., 2013; World Economic Forum, 2016). Consequently, the US Department of Labor in collaboration with its Bureau of Labor Statistics' Standard Classification of Occupations (SOC) developed the Occupational Information Network (O*NET). This taxonomy is based on highly valid statistical data and covers aspects such as typical activities performed on-the-job or recent physical working conditions (US Department of Labor).

Referring to the O*NET model, the World Economic Forum identified different core work-related skills that will characterize the requirements for employees through digitalization. Thus, a high level of problem-solving competence will be required as well as the ability to learn self-directed. This means employees are self-responsible for their learning process in order to be able to adopt new content in a timely manner and to adapt it to individual situations. (World Economic Forum, 2016).

It is important to note that the World Economic Forum does not follow the current understanding of competences in the field of business education strictly. It rather represents a practical approach and reflects the real need for the skills and abilities of industry. In this respect the present article focusses on the need of self-directed learning.

Problem and Purpose Statement

As pointed out future employees must show distinctive digital competences including communication skills as well as the ability to solve complex problems efficiently and evaluate the set measures (Botthof & Hartmann, 2015). The Future of Jobs report 2016 points out, that the outlined changes lead to a "shortening in the shelf-life of employees' existing skill sets" (World Economic Forum, 2016). This leads to the conclusion that continuous learning is necessary to ensure long-term success not only for the employee but also for the company. Therefore, the ability for self-directed learning is becoming more important (World Economic Forum, 2016; Botthof & Hartmann, 2015).

Research Question

The outlined purpose statement leads to following research question: How far and under what conditions are employees willing to accept the responsibility of self-directed learning? In this respect the topic of this paper is the employees' preference for independent learning and shows what requirements a company has to fulfill in order to support learning competence.

Review of the Literature

To answer the purpose statement, firstly a literature review was done to find a definition of learning competence that is suitable not only in theory but also for companies on the one hand.

On the other hand, the literature review addresses the framework which is necessary for self-directed learning. This is the basis for the validation.

Definition of learning competence

There are various opinions about how learning competence is defined depending on the field of research (e.g. Czerwanski, Solzbacher & Vollstädt, 2005 for school learning). To avoid misunderstandings, this paper will describe characteristics of learning competence that are relevant for industry.

According to Reinmann and Mandl (2006), learning competence is based on the constructivist learning approach and consists of the elements shown in Figure 1.

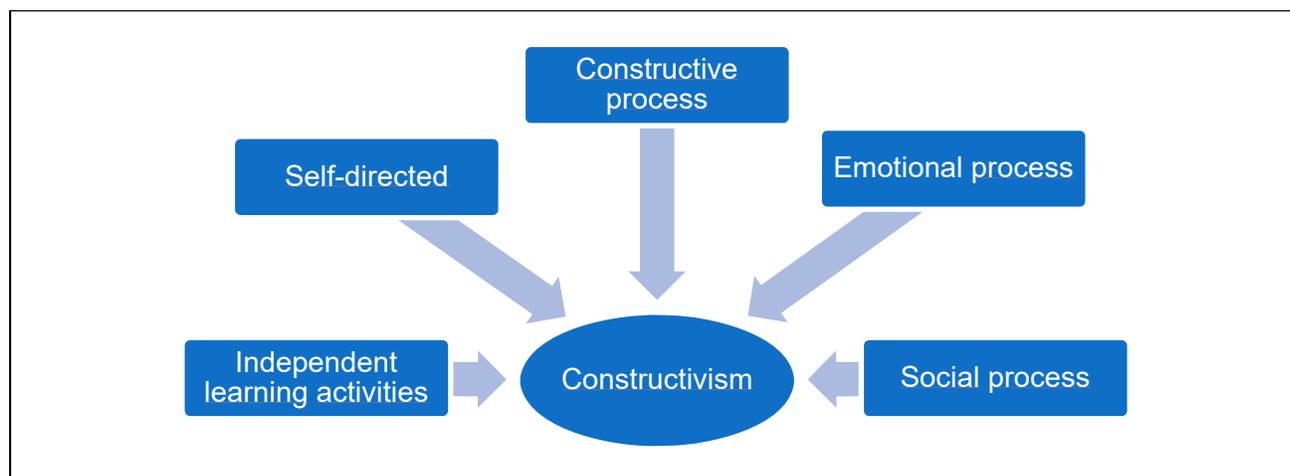


Figure 1: Elements of the constructivist learning approach (Reinmann and Mandl, 2006)

The outlined learning methodology relies on learning activities which are carried out independently in a predefined learning arrangement. For that purpose, the learning process takes place as a constructive process in which structures and links to the prior competences are developed.

Learning is an emotional process that challenges learners not only cognitively, but also emotionally and motivationally. Within the whole learning process social interaction is necessary to accomplish holistic and sustainable learning environments. Through interaction with others, a social phase of learning emerges and further learners are involved. This can also be named as social process (Reinmann & Mandl, 2006).

Self-directed learning

Based on the outlined definition of learning competence, advantages of having a high learning competence were analyzed. This was not only done for employees but also from the companies' point of view.

Above all, the term self-directed learning itself stands for the ability to acquire competences that take place mainly by means one's own volition and responsibility (Volke-Groh & Martens, 2001). Thus, self-directed learning is a sub-discipline of employee qualification and is understood as an opportunity to learn with and from each other (Heidack, 2001).

Referring to the outlined requirements, being able to learn self-organized enables employees to develop their competences more quickly and on demand (World Economic Forum, 2016). The challenge for companies is how to create the appropriate framework to support these learning processes (Kienbaum, 2015; Stocker et al., 2014). The employee must feel capable of developing qualifications for their own work (Bünnagel, 2012). Once these are created, the employee can manage his/her further education through

- individual optimal time,
- individual choice of training method, and
- individual training scale (Bünnagel, 2012; Erpenbeck & Sauter, 2013; McKinsey & Company, 2015).

Implementing self-directed learning in companies implies several opportunities and risks.

Opportunities

Individual learning offers employees a high degree of individualization and flexibility hence training is adapted to the needs of the employees (Heidack, 2001). Furthermore, flexible learning sessions, so called just in time learning or on demand learning is possible (Volke-Groh & Martens, 2001). Targeted learning leads to an increase in effectiveness as learning becomes part of the daily workflow (Dehnbostel, 2008)

Beside that the high level of self-responsibility can have a positive effect on the motivation of employees (Bünnagel, 2012; Frey & Osterloh, 2002).

Self-directed learning is part of an innovative human resources development culture which not only changes the HR department but the whole company strategy to provide the outlined opportunities. Additionally, employees need to be aware that the company is not responsible for their personal training, but must support the employees and provide necessary framework (Robbins & Judge, 2013; Bünnagel, 2012).

The outlined changes also involve risks that should be considered.

Risks

It is important to say, that not every company is immediately ready to adapt its learning culture as there are not only organizational requirements (Robbins & Judge, 2013). Especially employees must be ready for the change, which means that the outlined learning culture depends on specific competences (Lotter & Wiendahl, 2012). Hence the main risk is that the

employees are not able to learn in a self-directed way which leads to high physical pressure. Thus, it appears that employees develop either excessive or no demand on training. Employees must be supported in gaining self-management abilities to encourage employees to motivate and lead themselves and act independently (Bünnagel, 2012).

A second risk factor is related to acceptance. If the staff is not convinced of the new learning concept, the employees will not be able to implement and internalize it (Bünnagel, 2012). To promote acceptance, the management must support the new learning culture. Necessary resources must be made available and the employees must be supported in the introductory phase (Bullinger & Warnecke, 2003; Bünnagel, 2012).

Methodology

To answer the presented research question, firstly primary research takes place in form of a quantitative survey. Within secondary research the results are subjected to a validation process. There the results of the quantitative analysis are compared with current study results to determine the validity of the results.

The quantitative a survey was sent to 1,502 employees in Austria. The following criteria were relevant for the selection of the sample:

- Companies with more than 1,000 employees
- Locations throughout Austria
- Industry of technical services

The focus on all regions of Austria considers regional differences that could be occur. The restriction to the industry technical sales was therefore chosen because the legal regulations are very often changing in this sector, and employees are therefore particularly required to learn on an ongoing basis.

They employees were asked about their willingness to learn independently and under which conditions an optimal self-controlled learning process could be possible. In addition to the collection of demographic data, there were questions regarding further training in general and self-responsible learning specifically.

The survey was designed as a standardized questionnaire in paper form and covered both closed and open questions. With closed questions on the one hand demographic data were collected. On the other hand, areas such as the general willingness to learn, the attractiveness of incentives for self-directed learning or the quality of the previous learning arrangements were addressed. Open questions were directed primarily to the needs and attitudes regarding self-directed learning.

The evaluation of the closed questions was based on frequencies as well as on cross tables. Using cross tables allows a combined frequency distribution of different factors asked in the questionnaire and allows conclusions to be drawn about the interaction of several factors. The answers given to open questions were subjected and summarized to core statements which were analysed.

Findings

The aim of the study was to gather opinions of employees regarding self-organized learning and to derive possibilities for the implementation of self-directed learning within the company. The survey showed that generally there is a great willingness for self-organized and independent training. In total 253 questionnaires were fully answered, which means a return rate of 16%. Nearly 80% of the participants pointed out, that they are open minded for self-directed learning. Furthermore, even every fourth employee stated that he/she is motivated for self-directed learning also during free-time if learning on demand during working hours is possible as well. Further training only during leisure time is no possibility for the employees.

The results show, that traditional learning in form of face-to-face lessons is still the mostly preferred training method for more than one third of the employees as shown in Figure 2.

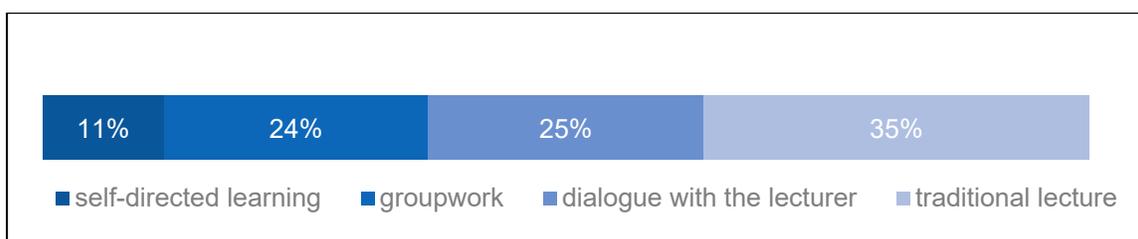


Figure 2: preferred learning methods

However, only about 10% of the employees said that they prefer self-directed learning. The big difference (80% are open minded but only 10% would prefer individual learning) can be explained by uncertainty. This result underlines the necessity of a holistic change process as well as the acceptance and support of the management.

Thus, the willingness is closely tied to the given framework conditions. Therefore, the following criteria are most frequently named by the employees asked:

- time for training within the working hours
- mobile digital devices are available
- training content is available unlimited
- training content is presented standardized

In addition, the employees stated that receiving qualification certificates would have a positive effect on self-organized learning.

Summing up the named aspects are boundary conditions for a high willingness to independent learning.

Validation of the results

Comparing our results with current literature the following table shows similarities as well as new approaches. Therefore, the framework conditions are categorised and compared to relevant scientific literature (See Table 1).

Table 1
Comparison of study results with current literature

Category Result of our study	Source 1	Source 2
Time Within working hours	Digital learning must be supported (Kienbaum, 2015)	Integration of training in daily operations (Dehnbostel, 2008)
Hardware Mobile digital devices	Flexible workplaces incl. digital devices are installed (Kienbaum, 2015)	Mobile learning (Erpenbeck & Sauter, 2013; McKinsey & Company, 2015)
Availability Unlimited/at any time	Learning on demand (Erpenbeck & Sauter, 2013)	Cloud-based learning (McKinsey & Company, 2015)
Content presentation Standartized	Context relevant information (Stocker et al., 2014)	---
Certificate Necessary	---	---

It can be seen, that nearly all defined framework categories are confirmed by other recent studies done in this field. Mostly named and most important for the employees asked is the desire for training within the working hours. Regarding to that Kienbaum and Dehnbostel both provide digital embedded learning as solution. (Kienbaum, 2015; Dehnbostel, 2004).

There is also wide consensus (Kienbaum, 2015; Erpenbeck & Sauter, 2013; McKinsey & Company, 2015), that innovative learning methods such as self-directed learning requires adequate hardware in order to provide flexible work- and learning-places. This is directly linked to the need for on demand learning or unlimited availability of learning material.

Also, very important is user friendliness. Provided training content must be clearly structured as well as reduced to context relevant information as seen by Stocker, Brandl, Michalczuk,& Rosenberger (2014).

The analysis of the data displays new criteria that cannot be found in the literature so far. The employees asked for not only certificates as motivational factor for learning, but pointed out that certificates are necessary to visualize their competences. This is a quite practical approach, which also depends on the industry of the company. This also might relate to the Austrian culture but would have to be analyzed in further research.

Conclusion and Recommendations

Living in an age of technical fast pace and digitalization it is important that employees realize that continuous improvement is necessary to be flexible and stay competitive. Therefore, self-directed learning is becoming a key competence. Employees must realize that further training is not a duty but a possibility for their personal success. Nevertheless, not only the acceptance for individual learning is necessary, but also the company must provide the required framework. The findings show that the main characteristics of a learning environment that facilitates self-directed learning. An embedded digital learning system must be provided that allows either on demand learning during working hours or flexible online training-modules.

Therefore, the implementation of a user-friendly Learning Management System (LMS) is recommended. Using a LMS allows companies to implement cross-organizational learning platforms that provide various learning content. The employees can define target-competences based on their individual training needs. Furthermore, the learning processes can be coordinated across the company by those responsible for human resources (Seufert 2001).

References

- Bauernhansl, T., ten Hompel, M., & Vogel-Heuser, B. (2014). *Industrie 4.0 in Produktion, Automatisierung und Logistik*. Wiesbaden: Springer Vieweg.
- Botthof, A., & Hartmann, E. (2015). *Zukunft der Arbeit in Industrie 4.0*. Wiesbaden: Springer Vieweg.
- Bünnagel, W. (2012). *Selbstorganisiertes Lernen im Unternehmen: Motivation freisetzen, Potenziale entfalten, Zukunft sichern*. Wiesbaden: Gabler-Verlag.
- Bullinger, H. J., Warnecke, H. J., & Westkämper, E. (2003). *Neue Organisationsformen im Unternehmen* (2nd ed.). Berlin: Springer-Verlag.
- Czerwanski, A., Solzbacher, C., & Vollstädt, W. (2005). *Förderung von Lernkompetenz in der Schule, Band 1: Recherche und Empfehlungen* (2nd ed.). Gütersloh: Bertelsmann Stiftung.
- De Vries, M. J. (2006). Two decades of technology education in retrospect. In de Vries, M. J. & Mottier, I. (Eds.), *International Handbook of Technology Education. Reviewing the past twenty Years*. Sense Publishers in Rotterdam, 3-12.
- Dehnbostel, P. (2008). Lern- und kompetenzförderliche Arbeitsgestaltung. In *BWP Berufsbildung in Wissenschaft und Praxis*. 2(2008), 37, 5-8.
- Erpenbeck, J., & Sauter, W. (2013). *So werden wir lernen! Kompetenzentwicklung in einer Welt fühlender Computer, kluger Wolken und sinnsuchender Netze*. Berlin: Springer-Verlag.

- Frey, B., & Osterloh, M. (2002). *Successful management by motivation: Balancing intrinsic and extrinsic incentives*. Berlin: Springer-Verlag.
- Heidack, C. (2001). *Praxis der Kooperativen Selbstqualifikation: Kompetenzentwicklung und Gestaltung des Wandels durch Kooperative Selbstqualifikation*. München: Rainer Hampp Verlag.
- Kagermann, H., Wahlster, W., & Helbig, J. (2013). *Umsetzungsempfehlungen für das Zukunftsprojekt Industrie 4.0*, Promotorengruppe Kommunikation der Forschungsunion Wirtschaft – Wissenschaft. Retrieved from https://www.bmbf.de/files/Umsetzungsempfehlungen_Industrie4_0.pdf.
- Kienbaum Communications (2015). *Ergebnisbericht HR-Trendstudie 2015*. Retrieved from http://www.kienbauminstitut-ism.de/fileadmin/user_data/veroeffentlichungen/HR-Trendstudie_FINAL.pdf.
- Lotter, B., & Wiendahl, H. (2012). *Montage in der industriellen Produktion* (2nd ed.). Berlin: Springer-Verlag.
- McKinsey & Company (2015). *Industry 4.0. How to navigate digitization of the manufacturing sector*. Retrieved from https://www.mckinsey.de/files/mck_industry_40_report.pdf.
- Ramsauer, C. (2013). *Industrie 4.0 – Die Produktion der Zukunft*. WING Business. 3(13), 6-12.
- Reinmann, G., & Mandl, H. (2006). *Unterrichten und Lernumgebungen gestalten*. In Krapp, A.; Weidmann, B. (Hrsg.), *Pädagogische Psychologie: Ein Lehrbuch*. Weinheim: Beltz, 613-658.
- Robbins, S. P., & Judge, T. A. (2013). *Organisational behaviour* (15th ed.). Cape Town: Pearson Education.
- Seufert, S. (2016). *Hard- und Softwareinfrastruktur für E-Learning auswählen*. Retrieved from http://www.ilias.de/docu/goto_docu_file_1244_download.html.
- Spath, D., Ganschar, O., Gerlach, S., Hämmerle, M., Krause, T., & Schlund, S. (2013). *Produktionsarbeit der Zukunft – Industrie 4.0*. Stuttgart: Fraunhofer Verlag.
- Stewart, T. A. (2003). *The wealth of knowledge: Intellectual capital and the twenty-first century organisations*. New York, NY: Crown Business.
- Stocker, A., Brandl, P., Michalczuk, R., & Rosenberger, M. (2014). *Mensch-zentrierte IKT-Lösungen in einer Smart Factory*. *Elektrotechnik und Informationstechnik*. 7(131), 207-211.
- US Department of Labor, Employment and Training Administration. (2017). *The Occupational Information Network (O*NET)*. Retrieved from <https://www.onetonline.org/find/descriptor/browse/Skills/>
- Volke-Groh, T., & Martens, J. U. (2001). *Individuelles Lernen erfordert soziale Phasen*. In Heidack, C. (Hrsg.), *Praxis der Kooperativen Selbstqualifikation*. München: Rainer Hampp Verlag, 31-34.
- World Economic Forum (2016). *The future of jobs. Employment, skills and workforce strategy for the fourth industrial revolution*. Retrieved from http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf.