Mechanisms to Support Informal Learning at the Workplace

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Abstract—Knowledge and learning have become critical assets for most companies because of the swift socio-economic and technological changes. Traditional training and learning can not cope with the rising demand of information, because of the inflexibility in time and place, the irrelevance of the content, the unavailability of experts and the applicability at the workplace of what is learned. The need for new concepts is very much related to the discussion on formal and informal learning. Formal learning only counts for 20\% of what people need to know to do their job well. The other 80 \% is acquired by informal learning that takes place in the vicinity of the workplace.

Index Terms—Informal Learning, Microtraining, Learning at the workplace.

I. INTRODUCTION

In reality learning happens all the time in a multitude of learning settings which can take place in a classroom, but obviously occurs most of the time in an informal situation. Still, it is about 80\% of the training budget that goes to formal learning which means that companies overinvest in formal training programs, while missing out on the opportunity to foster the more natural and informal learning processes.

For informal learning to flourish it is crucial to develop flexible mechanisms that support this kind of learning while avoiding the drawbacks that coincide with informality. The Microtraining method (MT) is such a concept to support ongoing informal learning practices. Microtraining helps to structure individual self learning actions and materials, e-learning and other learning activities, while focusing on the applicability of what is learned and needed in the workplace.

A Microtraining arrangement comprises a time span of 15-20 minutes for each learning occasion, which can activate and maintain learning processes for a longer period if they are bundled up in series, being face-to-face, online or in an e-learning situation. Microtraining is especially suitable for those whose basic knowledge needs to be refreshed or improved and who need information for immediate use in their daily practice.

The Microtraining method is developed on the basis of learning theories and concepts such as social constructivism and connectivism to support informal and both individual and collective learning in organizations. Experiences with the microtraining method in practice show that the short, structured procedure of a microtraining-session or a serial of learning sessions brings people together and offers a way to deal with the challenges of today’s learning demands of life long learning.

II. LEARNING DEMANDS

Nowadays formal learning, taking place at defined times and places far away the workplace, is the way of learning most companies spend a lot of money for. A company has a great influence on planning, structuring and controlling the learning activities of their employees with that way of learning [15: 17]. But it shows that this kind of learning is not flexible enough to react on fast changes taking place in today’s companies’ surroundings. Companies choosing this type of learning are not able to benefit from the advantages of informal learning settings.

Knowledge building, maintaining and sharing is a crucial asset for companies as well as knowing about and using effective ways of learning. That means that ways of learning are needed which can respond on the demands of a rapid development of needed application-oriented knowledge. Most ideas of e-learning-settings are based on the challenge to design more flexible ways of learning. In many cases, this leads to carry over the old-fashioned classroom-courses to flashy-looking e-learning scenarios, where still an isolated learner widens his knowledge separated from his workplace [6].

Criticism on approaches like this is related to the discussion about formal and informal learning. According to Digenti
[7] and Cross [1] formal learning does not work anymore, because this kind of learning only responds to 10 or 20 per cent of the knowledge people need at their workplaces. The overall 80 per cent are covered by informal learning activities on the workplace. Informal learning is seen as a more important critical success factor than formal learning settings [1: 235].

Informal learning is the way people are able to cope with situations and problems occurring in their daily work practice because this is the place it happens. It occurs through daily interactions and shared relationships in companies, independently from professionally structured or pedagogically planned programs.

Because of its unstructuredness, informal learning occurs to be a way of learning difficult to adopt for many companies. Informal learning is hard to be predictable. The responsibility for the learning outcome often lies in the hands of a trainer or coach [1: 4]. It is the way of learning where the learner is the one to define the planning, managing and controlling of where and when to learn [15: 17-18].

This also shows that we cannot see the difference between formal and informal learning as a strict segregation between two sites or learning activities. We see learning as a spectrum of possibilities, which ranges from formal learning oriented on classroom structures to informal learning seen as a self directed and social activity (see figure 1).

Even if informal learning shows a very generic way of learning, it is hardly been seen as learning itself. That is because it mainly is arranged individually and responsibility lies in the learner’s hands.

One clear advantage of informal learning is that a company is able to cope with new learning demands in a fast manner. For that it is necessary to develop and facilitate flexible learning activities which support informal learning strategies.

For this purpose the Microtraining method has been developed. It is a concept to support ongoing informal learning practices while keeping an eye on the balance between the disadvantages and the advantages of informal learning by offering a structure for informal learning experiences.

III. THE MICROTRAINING METHOD

Microtraining is a development scheme for structuring self learning or group learning, developing learning materials and learning activities such as e-learning. The focus of all these activities lies on the applicability of what is learned and needed in the workplace [3]. We see Microtraining as a learning arrangement which consists of several occasions each comprising a time span of about 15 minutes. These sessions can activate and maintain learning processes for a longer period if they are bundled up in series, being face-to-face, online or in an e-learning situation. Microtraining is especially suitable for those whose basic knowledge needs to be refreshed or improved and who need information for immediate use in their daily practice.

The theory of social constructivism [14; 16] gives important input to the idea of Microtraining. Training models based on the principles of the social constructivism seem to work well for informal, practical and spontaneous learning [3]. The main principles are that each person is unique regarding to knowledge and experience. People primarily learn by actively trying and learning always is related to a particular social context.

The learner plays a central role in the development of learning activities with the aim to make learning more efficient. As a consequence, motivation becomes an important stimulating factor; experiences from the past always play a role and each person has his or her approach to learning, very much related to knowledge and experience acquired in the past. These findings are very useful for the development of learning programs, but it is less useful to tell about new ways of communication or collaboration such as so called social software.

To comprehend such ways of learning, the concept of connectivism is also very useful [12; 13]. It helps to understand how the inclusion of informal learning as part of a learning strategy can work. The concept itself focuses on the changes taking place in society when it comes to knowledge and learning. Siemens observed that the
surrounding of knowledge changes regarding to the context knowledge appears in and regarding the flow and characteristics of the knowledge itself. By the quick emerge of new information media, the knowledge landscape is changing. In this new situation learning is more and more the ability to connect to different ‘nodes’ of knowledge, which are spread over a network of data, information and people and is called ‘connected knowledge’ [13: 10]. This includes that learning does not take place inside a learner, but is a process of exchange and externalization.

Assuming that people are unique learners, they also have different experience levels. According to Siemens [8; 9] this should be taken into account to clarify the different needs related to knowledge and experience. In general, three levels are distinguished: early development, competent and experienced, expert. A newcomer needs well structured, formal learning settings to support him or her with basic knowledge and skills in an appropriate way.

More experienced employees with advanced knowledge and skills are better served with a largely informal learning situation that fits the rather ad hoc learning needs, so common for workplace related learning. For people with expert knowledge and experiences, formal and structured learning can even become counter-productive, because it does not fit the very personal learning needs.

Taking into account learning theories and concepts shown here, Microtraining is a way to deal with individuals learning needs and experiences and the idea that learning is an active, shared process. Microtraining supports the development of short, customized learning sessions for different groups of employees with the focus on workplace related learning needs.

The Microtraining approach is based on the idea that several short learning occasions, bundled up to one Microtraining arrangement, foster this active process of knowledge gathering and sharing. Each session is structured the same way. It starts with actively, followed by a demonstration or exercise, feedback or short discussion, and ends with directions for further development and a brief preview of the next session [10; 4] (see figure 2).

The main goal of the Microtraining activities is to establish an effective way of learning by offering short learning occasions with a minimum of interruptions of the normal workflow. The sessions can be organized quickly by any internal or external acteur, referring to current needs and demands. To create sustainable learning outcomes, the design of the learning occasions has to take into account the knowledge and experience of the individual learner or learning group.

To facilitate the active self-directed learning activities of the employees, some organizational requirements have to be fulfilled. It is important that the Microtraining method cannot be supported by hierarchical control and standardized learning situations, but by decentralized and autonomous working units which integrate individual learning in the daily workflow.

Because active, self-directed informal learning is new to many companies and employees, it is important that a coach or trainer accompanies the start of implementing the Microtraining method in an organization. It is also crucial to offer an adequate (technical) infrastructure to foster cooperation in daily work.

Because of the characteristics shown above, the approach of Microtraining is a challenge for today’s learners and trainers. Two examples of Microtraining in practice show how it can be coped with this challenge.

IV. MICROTRAINING IN PRACTICE

Practical experiences with the Microtraining method show its applicability [10; 11; 5]. With the help of this method, people can be brought together and solve problems in cooperation. Individuals connect with each other, collaborate and produce artifacts which can be used
companywide. With implementing learning activities in the daily workflow, a quick transfer from knowledge to work practice is enabled. Learning time can be used efficiently and with a focus on individual learning needs.

One example is the application of the Microtraining method in a Dutch transport company [5]. The transport world in general shows a mastery of logistics with coordinating the transport of goods, transport chains, freight handling and planning arrangements. Rapid changes in the regulations and the organization of the transport sector make innovation an absolute necessity.

The main activity of the Dutch transport company Van der Wal is road transport, so most of the employees spend their days behind the steering wheel. This organization has chosen the Microtraining method as core learning approach and implemented it in its common learning strategy. Main target group of the learning activities are the company’s lorry drivers. They are no experienced learners but have an increasing demand on information and learning. Key elements of the strategy within this transport company are information exchange and improving of learning and performance. Microtraining is has been realized within the on-site organizational learning activities, but also as mobile learning on the go.

As a first step, a new learning policy was integrated in the strategic business plans of the transport company. This emphasizes on the importance of learning for the organizational performance and could be used as a framework to define basic and annual work profiles with individual learning needs.

Existing information resources in the company were complemented through interviews and a survey focusing on the communications needs of employees and management. From this it is shown that especially the lorry drivers are in need of professional information. At this time their main informants were colleagues (85%). The monthly paper newsletter was considered an important information source. Online information had not yet arrived as an alternative, but it was decided to extend this tool to an electronic newsletter and pilot this product over e period of time. The aim of this was to find out which functionalities were needed and what was needed to establish a 24/7 news service. Given the importance of interaction and cooperation the focus for the technology selection was on social software tools. As a useful alternative to other systems, the Drupal content management was selected. This open source software fits to the company’s demands of skills, flexibility and budget.

To become familiar with the Microtraining method, the managers were trained in the user of it for learning related purposes. In a series of workshops they dealt with the need for well trained and informed staff, the Microtraining methodology, Microtraining development and online course production based on the Microtraining method.

For the employees of Van der Wal’s transport company opportunities to attend place and time fixed learning activities is very limited due to their mobile workplaces. On the other hand, e-learning makes learning less place and time dependent. To implement this way of flexible learning, an online course about a new technical device, the Digital Tachograph, was developed on the basis of the Microtraining method. The layout of the course was based on short sessions with activating learning activities situated in a workplace context to inspire the learner. In the long term, the purpose is that the company will become largely self supporting in the development and maintenance of these kinds of learning events.

Key experiences in this company show that in the first line the electronic newsletter is highly appreciated by the lorry drivers. Employees and managers contribute to the news flow by sending in messages, links, reports, pictures, mobile phone video clips, etc. All information is being tagged to allow easy access to topic related information.

Also the online learning course in the Digital Tachograph is used frequently. It was developed in close collaboration with the end users. A first test showed that the users liked the electronic opportunity, had virtually no difficulties with the navigation and considered the information given as informative and useful.

Another example of Microtraining in practice shows a semantic-based knowledge platform in the Do-it-yourself (DIY) branch. This platform is the outcome of the project “RELOAD” funded by the European Union. Core aim of this project is to support the employees of this sector with learning and information.

In general, the Do-it-yourself (DIY) branch is confronted with an increasing amount of manufacturer’s information which must be transferred quickly to the daily work practice. On the other hand, the demographical structure of the branch shows that employees are older and have less learning experience. For these kinds of employees the rising amount of information is a difficult challenge [2].

To cope with the characteristics of the older and less experienced employees, a didactical concept has been developed on basis of the Microtraining approach. Together with that, a semantic web was used to facilitate self-directed and media supported learning. For that purpose, a knowledge platform was designed and implemented in two companies of the German Do-it-yourself branch.

Manufacturers as well as the companies itself are able to develop own Microtraining activities for the platform and deliver them to their employees. The employees can use the
Microtraining units to give better advice to their customers. The question of a customer can be the active start for a Microtraining session. The platform offers the employee several ways of access to the given information, like a search engine, a library, a tool-finder and a so-called application-house, where information can be searched by different topics in an interactive 3D-illustration of a construction site. All information stored on the platform is also based on a semantic web, which offers the possibility to connect the learning modules with each other and allows a self-directed, nonlinear way of learning.

The knowledge platform was used in a pilot phase in two German Do-it-yourself companies. After the pilot phase, interviews were held with selected employees. The interviews showed that that a well-structured and accompanied initial phase for the new way of learning is of high importance, especially for those how have less learning experience. The way of self-directed learning with the help of a new tool like the RELOAD-platform seems to be a difficult challenge for this group of employees and cannot performed without the (initial) help of a trainer or coach.

As a second result we see that organizational requirements are also of high importance. For a real learning on the workplace it is necessary to provide each learner with the needed (technical) infrastructure. In some places, access to a computer was very difficult and the employee had to leave his or her own workplace which seems almost impossible. Because of this, the platform was not used after one or two try-outs any more. Instead of this, traditional ways of information gathering like asking a colleague or calling the manufacturer remained instead of using the new learning opportunities.

As a third point it is shown that implementing the new ways of learning into the companies’ business plans is a necessity for the success of new learning strategies. The management has to support these new ideas which should be clear to all employees. In some cases it was not clear whether the employees could use some of their working time for learning purposes or not and some did not had time at all to use the platform.

The two cases shown above show that organizational requirements, facilitating the new learning concept by the management and accompanying the initial phase of implementing the Microtraining method are crucial for its success.

V. CONCLUSIONS

In summary, companies nowadays are hardly aware of the value of informal learning and implementing those ways is a holistic approach. The value of informal learning is evident, and the Microtraining concept is a method to deal with the organizational requirements to make informal learning applicable and successful. The Microtraining method connects different ways of learning by strengthening the focus of individual and connective learning on important topics for daily work practice.

Because the single Microtraining units are short, this way of learning offers a very flexible way of learning. With that, Microtraining closes the gap between motivating and supporting the employees’ responsibility for their own learning processes, sharing and transfer of knowledge as well as use of individual competences and valuation of the employees’ performance. With the Microtraining method, organizations are facilitated with a way to life-long learning.

REFERENCES


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