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# eLearning in the area of vocational training and further training

Summary

# SUMMARY

The vocational training and further training system in Germany is characterised by a long standing successful image, its federal structure and a high degree of institutional diversity and complexity. The central element of the vocational training system is the »dual system« combining learning at the workplace with that in public vocational schools. However, with a background of socio-economic change, the trend towards individualisation and globalisation, this system is also facing new challenges.

Both generally and seen in the long-term, further training in Germany is a growing area, the number of participants having almost doubled since the first survey in 1979. The use of further training measures has however been declining since 2000, particularly in the new Federal States.

The essential characteristics of the change in vocational training include:

> a transformation in the *determination of functions*: the discontinuous »stock-piling of knowledge« is being replaced by continuous further training in the sense of lifelong learning.
> a shift in *content*: in addition to specialist knowledge and abilities, competencies and job specifications which focus on problem solving, self-organisation ability, co-ordination and communication skills are becoming increasingly necessary.
> new *means of conveying knowledge*: the importance of informal learning processes (e.g. collegial discussions) and non-formalised learning (e.g. quality circles and project work) as well as the use of new media is increasing.
> a new *training/learning culture*: self-organised learning and the didactic principle of individual motivation to learn is coming to the fore as the most important characteristic.

The use of new media in further training is intensifying globally, not least in order to be able to implement the necessary change. »New« forms of conveying learning content in a company are therefore increasingly gaining in importance alongside existing »classical« forms. Computer aided learning using offline methods is used by 29% of companies in the meantime. Web-based training – meaning online learning in the Internet, Extranet or Intranet – is used by 13% of companies.

In view of the opportunities and requirements of eLearning, the training person-
nel ultimately also gain a new importance. Those responsible for education are
transforming themselves from imparters of knowledge to facilitators of learning
processes. Here the appropriate qualifications and experience with eLearning
methods is of central importance for training staff, and the trainers are also sub-
ject to the necessity of continual further training.

## REGULATORY FRAMEWORK FOR ELEARNING IN VOCATIONAL TRAINING AND FURTHER TRAINING SYSTEM

The European Centre for the Development of Vocational Training (CEDEFOP)
has defined eLearning since 2000 as learning based on Information and Com-
munications Technology (ICT). eLearning implies more than the acquisition of
competencies in the IT field; it has more to do with multiple formats and hybrid
methods, the use of software, Internet, CD-ROMs, online learning forms as well
as electronic or interactive media.

eLearning itself does not describe a specific learning strategy, learning concept
or a particular method of learning, but rather refers to the support of learning
processes through electronic media. The media used may assist the self-direct-
ed acquisition of information, support communication or provide didactical-
ly structured learning modules. Online learning may be best suited to exploit
the potential of eLearning, however it is not the exclusive design function for
eLearning.

The question as to the content of eLearning has less to do with training and
learning courses in themselves, what is more important is the »precise fitting«
and exchangeability of multiple applications – also in the sense of extensions to
proprietary developments. eLearning courses have to date been characterised
by specialist content and technical standardisation and industry standards of
practice; through which they at times neglect the specific requirements of users.

Whereas content-oriented eLearning variants can be understood as the distribu-
tion of primarily multimedia learning materials, the process-oriented variants
of eLearning aim at the use of new media for the design and control of learning
processes by the trainer. In practice there are often additionally hybrid variants
(e.g. blended learning).

A series of conditions determines the implementation of eLearning in profes-
sional practice. These include the development of suitable standards, organisa-

tional regulations, the implementability of self-organised learning, the degree of interactivity, and not least the support of the learner by the company's human resources development department.

A fundamental prerequisite for an effective use of eLearning in vocational training and further training is its organisational implementation. Initially, actual requirements should be ascertained, these are then linked to the corresponding media and learning technologies. On this basis a company-specific eLearning strategy can be developed and implemented technically and organisationally. The particular challenge lies in the fact that, on the one hand learning represents something individual and consequently the basic requirements also vary widely, on the other hand however, due to financial restrictions particularly when implementing eLearning, there is often an attempt to dictate a uniform solution (procedure) for all the persons concerned.

Successful eLearning assumes a capability and readiness for self-learning. It is not only the trainers and course instructors who have to attune and prepare themselves for new virtual forms of learning. There are also demands on the companies and persons responsible for further training. Online-based forms of learning present the culture and the organisation of the company with a fundamentally new situation, requiring changes in internal procedures and processes. In order to introduce and implement such learning forms, a training management system is required, which understands the scale of the changes and is able to analyse and professionally intervene continuous where necessary. eLearning should be treated as an organisation development process, where work and learning are closely co-ordinated. eLearning – in whatever concrete form it takes – can only then be successful, if this learning form is not only recognised by the company management, but rather is also integrated above all into the whole operational context.

In general the social conditions offer good opportunities in the meantime for a broad acceptance of eLearning and its diffusion into many sectors of vocational training and further training. There are positive effects here due to the growing availability of computers in both the private and business sectors, and thereby also a growing media competence in the population; the elementary basic patterns of online learning are meanwhile known by many people. Moreover in Germany broadband technology – as a further important technical prerequisite – is used by a relatively large and increasing sector of the population in the meantime.

## PROVIDERS AND USERS OF ELEARNING COMPONENTS

In respect of the »market situation« for eLearning in vocational training and further training, the following types of providers can usually be distinguished:

> Content providers (owners of the rights to learning content) and companies creating/processing learning content.
> Companies which supply the technology for the production and distribution of eLearning courses.
> Companies which take on advisory functions, production, distribution and implementation of eLearning courses.
> Companies which offer complete solutions or one-stop solutions.

The market for companies which provide eLearning content can be further subdivided into companies which either own the copyright to the material or buy the material and adapt it into a (new or different) suitable form for eLearning or those which simply resell eLearning content. As regards content it is noted that the EDP/computer subject area holds an outstanding position.

Overall the market for eLearning providers is highly fragmented. The firms entering the market are no longer primarily the start-ups and founding entrepreneurs which characterised the market before 2001, but rather established firms, which are already operating in related industries and are expanding their range of services into the eLearning market.

The demand for eLearning courses comes mainly from big firms, although there is some demand from public authorities as well as small and medium-sized enterprises (SMEs). In the practice of further education within public authorities the implementation of eLearning is not generally widespread. By the same token, eLearning is not yet adequately deployed in SMEs. Possible reasons for this are:

> personnel development through vocational further training has no strategic value,
> the decision makers responsible for further training have not informed themselves with regard to eLearning,
> there is a fear that employees who have gained further qualifications at the company's cost will be poached by other companies, and
> the SME employees' own learning ability is underdeveloped.

## ELEARNING IN VOCATIONAL TRAINING

With the exception of individual projects, eLearning does not yet play a major role in initial training in vocational schools within the dual system. Concerted action, or a stringent common strategy with regard to a systematic integration of the advantages of eLearning into the individual professional training courses is not discernible. There are a number of reasons why this integration is so hesitant. These include the infrastructural equipping of the vocational schools as well as reservations on the part of the trainers.

Empirical studies on the prevalence of eLearning in vocational training – although there have been few of these to date – show in principle that companies require planning and action aids in order to implement the new vocational training regulations as well as their underlying modularisation. What is central here is appropriate teaching and learning methods, new media, as well as concepts for the organisation of learning and examination of process-oriented vocational training, which are still not specified in the vocational training regulations. It can already be seen, that dynamic, process-related qualification can only be provided if the technical possibilities of eLearning are completely and comprehensively used. The learning programmes generally used in organisations predominantly apply concepts involving programmed instruction which are thus contradictory to the tried and tested methods of activity orientation in operational practice. There is therefore a need for clarification as to what extent the tried and tested learning task concepts in activity-oriented vocational training can also be effectively assisted by electronic media.

The evaluation of the support programme »New Media in Education« showed that the technologically-triggered developments have led to qualitative improvements in vocational training. Added value was created in particular through the improvement in flexibility of the organisation of learning, the increase in participation in the further training, the effectivisation of the learning costs, the practical relevance through modularisation and the development of practical communities. Opportunities for improvement were seen in the following areas: The division of learning into small parts (self-contained learning content), a lack of pedagogic functionality in the learning platforms, a continuing partial overestimation of the technology instead of focussing on the didactic style, inadequate qualification of the trainers and tutors and a lacking of implementation strategies related to organisation and use. The recommendations for action which derive from this refer essentially to the necessary support for the development of

> the vocational teaching and learning culture through clarification, orientation to target groups, integration of methods and self-organised, informal expert community in companies (»Community of Practice«),
> trainers' media-didactic competencies for counselling, online support/presentation and administration,
> virtual learning locations for learning location co-operation on the task-based integration of theory and practice as well as
> didactic models for virtual learning.

## ELEARNING IN VOCATIONAL FURTHER TRAINING

The eLearning instruments play an important role in vocational further training, in particular in areas alongside the existing »classical« forms of conveying necessary knowledge in a company, where on-the-job measures as well, such as the systematic transfer of job assignments for employees within an organisation are increasingly coming to the fore. Here eLearning influences the type and scope of the qualification terms with a »Just-in-Time-Qualification approach«. The focus of the further training measures will no longer lie with the previously so-called »block conveying structures« which were principally used. In future the qualification process will be more involved in the respective work situations and carried out in an analogous manner to the production process. The conveying of particular knowledge modules at the time they are required with the aid of the opportunities provided by eLearning will transform the entire existing structure of vocational further training in the medium term.

eLearning does not however mean that other (known) further training instruments will be completely replaced, but rather qualitatively supplemented. This will be accompanied by a new orientation in the training management system: The development of training management from a course to a media-based system will be complemented by integration-based training management. Its characteristics are:

> the integration of eLearning instruments into the company strategy;
> the establishment of a corresponding knowledge management system;
> the close interleaving of learning and business processes;
> organisational and technical reproduction in the operational IT landscape.

This is why interest is growing in many companies, in virtual qualification groups using a common training network, to set up, use and maintain process-oriented learning databases (so-called data warehouses).

A forward-looking principal use is developing in the form of so-called Online Communities, informal groups or networks of people, who as a result of common interests communicate with each other via the Internet over a long period of time and co-operate, exchange knowledge and experience, create new knowledge and learn from each other. Online Communities allow the users to undergo transformations, they impart assistance for the acquisition of new knowledge, they build up trust, create a sense of community spirit and support lifelong learning. The benefit for organisations and companies lies in the informal absorption of information, the increase in productivity, the speeding up of innovations and the strengthening of strategic thinking.

## RÉSUMÉ

The opportunities and modalities of eLearning will probably transform the vocational education system seen as a whole in much the same way that »eBusiness« has already transformed the entire economy. However eLearning will not replace other training instruments, but will rather qualitatively complement them. And even if eLearning is perhaps able to establish itself in future in a broad sense as a significant training instrument, the expectations that were raised several years ago through analyses of potentials have to date been only partially met on the basis of current experience. The preparation, representation and quality of the eLearning content make up the decisive success factors for both facilitators as well as the learners, and there is still considerable potential for development in these areas. eLearning will only then be able to assert itself in the long term in everyday operational life as well, when acceptance and implementation is ensured and the eLearning courses provide all concerned with the desired added value. In order for this to be achieved there is a requirement for firstly, a significantly more detailed insight into the embedding of learning processes in the habitual or working world, and secondly for instruments, which ensure the quality of eLearning content is not only realised in retrospect, but can be guaranteed during its creation or application. Not until these hurdles are cleared will eLearning be able to develop its potential for vocational training and further training.

In order to provide evidence of the practicability of the sustainable integration of regulated vocational training into operational procedures (and thereby also an improvement in acceptance and legitimisation), would initially require in future an in-depth analysis of currently available approaches to process-oriented vocational training as applied knowledge management systems in companies. Through needs analyses and models, important contributions towards the an-

choring of new forms of learning in companies could also additionally be made leading to a dynamic qualification process using electronic media.

As it is unrealistic and hardly conceivable that a institutionalised network for the development of competencies should be built up in competition with the institutionalised vocational training system, specific assistance and instruments for the integration of new approaches in (super)operational training management systems need to be developed and tried out in the vocational training institutions as well.

The by far largest sector of the vocational training system (vocational training but also further training) comprises the »dual system« combining learning at the workplace and in public vocational schools. Measures taken here would therefore have far-reaching effects on a large number of learners. One option for action to promote eLearning in the dual system would, for example, be to select a suitable number of those professional training courses most in demand, to identify overlapping learning content within the selection and to produce high quality eLearning modules within the framework of a model project. Such a course of action could result in a large audience within the vocational training area of the dual system being addressed at a manageable cost and the success (or failure) could be meaningfully evaluated.

A special investigation could be instigated, the object of which being to identify exactly what common learning content allows itself to be particularly well-conveyed through eLearning modules, as well as specifying potential barriers.