

GLOBAL E-LEARNING TENDENCIES AND POSSIBILITIES OF USING THE INTERNET FOR VOCATIONAL AND EDUCATIONAL TRAINING

Armin von Gruchalla (Consultant)

Dipl.-Ing. Frank Stauch (a.i.m. GmbH Munich)

Index: Distance learning, Web based training, Learning platforms

Abstract: The Virtual Training Center (VTC) integrates the ideas of media-based learning environments into the idea of the learning platform which has increasingly influenced theoretical discussions at international congresses (e.g. Learntec 2000, Karlsruhe, see www.learntec.de).

The VTC simulates a training center in the web and serves as a platform of internet or intranet based courses and self-learning media. Seminars and workshops can be held, media and documents can be worked on and administered and know-how can be exchanged.

The basic idea of the VTC is to create a web-based infrastructure which shelters all possibilities of web-based teaching, learning and training.

INTRODUCTION

In the age of the internet, the term “learning environment” embraces a new dimension.

The system presented in the following tries to meet the conditions made on an internet-based teaching, learning and induction system.

According to Peter Strittmatter/Helmut Niegemann („Lehren und Lernen mit Medien“, page 7 ff, page 138) a system must have the following functionalities:

1. Teaching function
2. Interactivity
3. Adaptivity
4. Self-control
5. Modalities

1. BASIC MODULES

1.2 The Entrance

After the learner has logged in, the entrance of the VTC appears.

The individual rooms can be entered with a mouse click.

An information board shows the current seminars and workshops. The individual courses can be selected from here. With a mouse click the Participant jumps directly into the auditorium.

1.3 The Assessment Center (AC)

With the help of the Assessment Center the demand for training and further education of individual employees, work groups or entire organizations can be assessed. Here, tests can be implemented which can be evaluated and analyzed by the system.

Furthermore, there is the possibility of recommending to individual employees or groups the participation at seminars or the use of teach-yourself media within the VTC. The contents of the Assessment Center are to be developed and implemented with regard to the specific demand, they are not included in the Basic Module.

1.4 The Auditorium

In the Auditorium the speeches and presentations are given.

On the screen a Video Window, a Media and Document Window and a Discussion Window appear which fulfill the following functions:

- **Video Window**

Here the trainer or presenter giving his speech is shown by video.

Below the Video Window there is the control bar which enables the functions „start“, „stop“, „forward“ and „back“. After the presentation the video is transferred into the Folder of the learner (see 3.1 for function of the Folder).

- **Media and Document Window**

At the right side of the Video Window there is the Media and Document Window.

Here the text and graphic documents revised by the presenter are shown; they can be transferred to the Folder as well.

- **Discussion Window**

The Discussion Window is placed below the Video Window and the Media and Document Window. In the Discussion Window, the course of the presentation is documented in form of brief notes; also documented are the discussion contributions (Q&A's from the presenter as well as the learner).

The speech can be summarized by the Trainer and be shown in the Discussion Window with the accompanying documents. These will be seen as icons. The Participant can choose to view the documents or to transfer them to his Folder (see 3.1). The documents can be processed further with the Office applications.

Furthermore, there is the possibility of putting individual hyper links into the key words of the notes, which connect to stored documents, explanations or contacts as well as further web sites in the library. Questions and comments of the participants are represented here as well.

The Discussion Window also shows the state of the Trainer and Participant. The following is stated:

The Trainer's and the other Participants'

- presence
- absence
- activities (e.g. would like to ask a question or is sending a document).

1.5 Self-learning Center (WBT)

In the Teach-yourself Center, the learner can work with media like Computer Based Training (CBT) or Web Based Training (WBT). The use of the media can be on line in the web or off line with a download. The media are administered in the WBT. The Administrator, Trainer and Participant have numerous evaluation possibilities such as access, duration of use, results of study or state of study.

The media are to be developed according to specific demand and are not included in the Basic Module.

1.6 The Evaluation Center (EC)

The Evaluation Center enables the learner to check his knowledge. Tests and exercises which are evaluated by the system provide information about the learning success and knowledge deficits.

The individual tests and exercises are to be developed in regard to the specific demand and are not included in the Basic Module.

2. ADDITIONAL MODULES

2.1 The Team Center (TC)

The Team Center is meant for group work in the VTC. The TC is divided into sections in which individuals or groups can work on their tasks.

In the left window the members of one's own group and the other groups are represented as „placeholders“, i.e. the presence of the group members are presented graphically (symbol, photo or picture of the member). On clicking on a placeholder a window opens in which the team member is presented briefly (e.g. name, telephone number, division, place, function, address, photo). Apart from the team members, the Trainer can also enter the Team Center. It is possible for him to follow the discussions and tasks and to intervene in individual processes if necessary.

2.2 The Simulation Center (SC)

The Simulation Center enables and supports the work with virtual and/or real instruments or equipment. One can use in practice what one has just learned.

The contents and the virtual instruments or equipment are to be developed with regard to specific demand and are not included in the Additional Module.

2.3 The Coaching Center (CC)

In the Coaching Center, the learning and transfer processes are accompanied by e.g. curricula or task lists developed separately or by best-practice-solutions stored in the data base.

3. PERMANENT FUNCTIONS

3.1 Basic Functions

3.1.1 Folder

All the Trainer's and learner's documents sent and selected are transferred into the Folder.

When a document is sent, the addressee receives a message (e.g.: You've received a message or a document.).

Apart from information and documents, also tasks and notes as well as electronic documents can be transferred into the Folder by the Trainer or another learner.

3.1.2 Information Board

The Information Board presents all seminars, workshops and documents available in the Virtual Training Center.

They can be selected directly from the Information Board.

The information can concern past courses or be an announcement of future courses. At the same time, information is shown such as names of contacts or documents available for the course. It is also possible to electronically enroll for individual courses from the Information Board.

3.1.3 Information Manager

The Information Manager puts all relevant information at the Trainer's and the Participant's disposal.

Search Functions

- Topic
e.g. staff, marketing, strategy
- Period of time
The search can be limited to certain years/months etc.
- Piece of information
e.g. document, medium, web sites, seminar

A combined search is also possible (e.g. all regulations for bookkeeping in the period of 1997-1998).

Right of access

Trainer and Participant can have different rights of access within the VTC (e.g. participating at a certain course and access to all information in the library). The rights are shown to him via the function „right of access“.

News

News on the Training Center can be viewed here.

Schedule

The Schedule presents the individual dates concerning the courses (e.g. day of presentation, submission of interim results).

3.2 Additional Functions

3.2.1 E-Communication Functions

The learner and the Trainer have the following electronic communication functions at their disposal permanently:

- **e-mail**
for transferring texts and documents
- **e-audio**
for transferring acoustic information (e.g. as an audio conference)
- **e-video**
for transferring videos
- **e-document**
for transferring and jointly working on documents (document sharing)

When a function is selected, a window opens with the relevant application.

The implementation of the individual systems (e.g. video and/or audio conference system) is prerequisite for the E-Communication Functions.

3.2.2 E-Office Functions

The Microsoft Office applications (e.g. Word, Excel, PowerPoint, Access and Project Manager) can be opened via mouse click at any time in order to work on documents.

Prerequisite for the E-Office Functions is the previous installation of the applications on the computers in use.

3.2.3 Presentation Manager

The Presentation Manager is a function for the preparation of the courses and the presentation of results. When the Presentation Manager is selected, a window opens in which the course of the presentation is shown.

Via drag and drop the presenter (Trainer or Participant) can arrange chronologically the documents and media which he e.g. transferred into the Folder.

When presenting, these can now be selected and will then appear in the Media and Document Window of the Auditorium.

At the same time the presenter can enter the notes of his speech, e.g. in form of a structure, and attach the individual documents to the individual notes.

3.2.4 Editing Manager

The Editing Manager enables the Trainer to create contents and exercises in the modules of the VTC. With the Editing Manager exercises can be created in the Evaluation Center which are put at the learner's disposal randomly and evaluated afterwards.

4. ADMINISTRATION OF THE VTC

4.1 Administrator

The Administrator (Supervisor) is responsible for the entire administration of the VTC. His tasks are mainly to administer the data base and supervise the users, as well as supervising the rights of access and servicing the system.

Administering the data base includes the registration and changing of data regarding the participants and trainers, data such as name, user name, password, e-mail address, company, place, function or photo as well as right of access. Moreover, the Administrator supervises the so-called active data, i.e. the data variable over a period of time, e.g. the documents or media for a course or the results as well as the rights of access.

The supervision of the users includes the functional part of the system. Users having problems with accessing the system or the electronic communication have to receive competent help.

Servicing the system includes installing updates and regularly checking all functions so that a flawless use of the entire VTC can be guaranteed.

4.2 Trainer

The Trainer is responsible for the technical contents of the courses and the educational supervision of the learners.

The Trainer logs in to the system with his user name and personal password. According to his current rights of access, he receives certain rights such as access only to his own course and relevant information in the library.

He can store, call up and work on his media and documents in the library. The information is stored via the Central Web Based Data Base in form of a graphic interface. The Trainer can select the media and documents and decide where in the library they are stored.

Via the Trainer's rights of access it is guaranteed that he can only change or complete data in regard to the course within in the library.

4.3 Participants

Just like the Trainer, the Participant also logs in to the system with his user name and personal password. He, too, receives the current rights of access from the Administrator; e.g. he only receives access to a course if he has paid it in advance.

4.4 Automated Processes

Automated Processes are based on rules which reduce the administration. If, for example, the Trainer invites the Participants to an auditorium meeting, e-mails are sent automatically to the participants and their rights of access are changed in such a way that they will have access to the data and to the planned meeting at the stipulated time.

REFERENCES

- Corte, E. de (1996). Learning Theory and Instructional Science. In: Reimann, P., & Spada, H. (Hrsg.), Learning in Humans and Machines: Towards an interdisciplinary Learning Science (97-108). Oxford (u.a.): Pergamon.
- Euler, D. (1992). Didaktik des computerunterstützten Lernens: praktische Gestaltung und theoretische Grundlagen (Hrsg. Bd. 3; Holz, H., Zimmer, G.), Nürnberg: BW Bildung und Wissen; 1. Auflage (Reihe: „Multimediales Lernen in der Berufsbildung“; Bd. 3).
- Gill, Indermit S., Fluitman, Fred, Dar, Amit (2000). Vocational Education and Training Reform, Matching Skills to Markets and Budgets. Published for the World Bank by Oxford University Press, Inc.
- Issing, Ludwig J., & Klimsa, Paul (Hrsg.) (1995). Information und Lernen mit Multimedia. Weinheim: Psychologie-Verl.-Union.
- Mandl, H., & Reinmann-Rothmeier, G. (1995). Unterrichten und Lernumgebungen gestalten. München: Ludwig-Maximilians-Universität, Institut für Empirische Pädagogik und Pädagogische Psychologie (Forschungsbericht).
- Merrill, M. D., & the ID2 Research Group (1996). Instructional transaction theory: Instructional design based on knowledge objects. Educational Technology, 36(3), 30-37.
- Merrill, M. D. (1999). Instructional transaction theory (ITT): Instructional design based on knowledge objects. In: Reigeluth, C. M. (Hrsg.), Instructional-design-Theories and models. A new paradigm of instructional theory (397-424). Mahwah, NJ: Erlbaum.
- Strittmatter, Peter & Niegemann, Helmut (2000). Lehren und Lernen mit Medien. Wissenschaftliche Buchgesellschaft, Darmstadt.