Multimedia-based Training by infoWERK

Developing skills for the future

infoWERK
medien & technik

infoWERK – The eLearning company

In the last decades, we have witnessed social and technological changes that require new and continuously renewed competencies for individuals. Some of these changes are: the rapid evolution of knowledge, new forms of job organization, globalisation and the rapid increase of the information society. These transformations are also reflected in the areas of training and further education. One of the arising challenges is how to develop strategies to guarantee knowledge availability anytime, anywhere. E-learning offers this ability, and is a media ideally suited to ensure flexibility and consistent knowledge transmission for persons of all age groups, nationalities, backgrounds and educational levels.

infoWERK – as a center of competence in the e-learning sector - is developing **high quality multimedia-based training systems (MBT)** based on international standards, mainly for the transportation industry. We combine expertise from the corresponding branch of knowledge, instructional design, media education and programming technique to make learning a more stimulating experience and to achieve positive training results.

infoWERK affiliates

Our affiliate **infoWERK Medien & Technik GmbH**, situated in Stuttgart, Germany, is a general supplier of tailored presentation equipment, media and teaching systems for education and presentations. The company projects and implements technical equipment for education, presentation and conference establishments. Among its customers there are numerous leading education institutions and international companies having training, seminar and conference settlings in Southern Germany. For more information see www.infowerk.systems.

Branches of industry

TRANSPORT INDUSTRY

AVIATION

infoWERK Aviation products are designed and created by **experts in the fields of Aviation**, Education, Computer Science and Graphic Arts, working together to provide you with the **most advanced e-learning products on the aviation market**. With many years of experience in developing **web-based pilot and maintenance trainings,** infoWERK can offer a broad range of "off the shelf" products for basic training, type training or specified training such as "De-/Anti-Icing on the Ground", "Human Factors Training", "Aviation Legislation Training" or "Dangerous Goods Training". All of our products are web-based, state-of-the-art and highly interactive. We also develop courseware especially designed to meet the needs of our customers.

MARINE

Like our Aviation products, experts from the marine and instructional design industry design all infoWERK Marine products, to bring you all of the advantages of e-learning. Our Marine training courses programs comply with current industry standards, such as IMO, STCW 1995, SOLAS and ISM Code. They are designed to be used as aids to instructors for classroom training or for stand-alone training via the Internet. All of the infoWERK Marine training products can be used as is, or tailored to your individual needs.

RAILWAY

infoWERK's Railway Business Unit brings our leadership and know-how from the Aviation and Marine Industry to other branches of transportation, including Rail. Together with experienced subject-matter-experts we are developing interactive, multimedia-based learning programs **for maintenance and operations personnel in the Rail transportation sector**.

Related products and services

TELETUTOR TRAINING

To tutor students via distance learning is the all-important key for success in e-learning. As a producer of e-learning systems, infoWERK is particularly concerned with efficient training for instructors dealing with e-students.

Since the learning situation on the computer differs widely compared to classroom training it is absolutely necessary to **teach the instructors how to coach, guide and assist their e-students during their learning process**.

The teletutor training offered by infoWERK gives both, detailed theoretical background behind distance learning but puts a high emphasis also on practical examples.

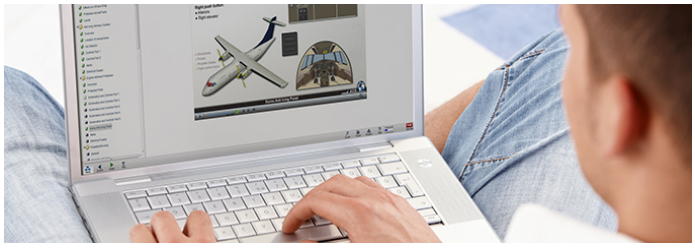
During the training the prospective teletutor learns to accompany the e-student confidently and to understand the situation in which the learner is. He finds out about different roles, learns different coaching tasks/methods and tools and is able to use them appropriately. Furthermore, he learns how to diagnose the learning process of the individual and the group in order to take the right actions.

The main course topics include:

- Fundamentals in e-learning
- Role and tasks of a teletutor
- Support and communication with synchronous (Chat) and asynchronous (Forum, e-mail) communication tools
- Specific support situations during the e-learning – Online coaching of the learning process
- Learning control and feedback

Learning how to motivate and tutor students via distance learning is regarded as an important part to optimize future requirements and should therefore be essential for everyone using web-based training products.

LEARNING MANAGEMENT SYSTEM



The infoWERK Learning Management System (LMS) is an **enterprise software application for delivering education online**. It leverages and extends the power of corporate training and provides the foundation for improved effectiveness of the training process by **enabling the delivery, management, administration and monitoring of e-learning**. Based on international standards, the LMS includes user, course and module administration, various communication options and precise documentation of the trainee's learning progress, allowing detailed user reports to be retrieved at any time. infoWERK's LMS is extremely flexible since all system components are independent parts of a modular structure. This modular design allows adding new functionalities without changing current functions and also supports a large number of fully independent customers, each with customized system configurations.

Development Standards

All infoWERK multimedia-based training systems are based **on international standards such as AICC** (Aviation Industry Computer Based Training Committee), **SCORM** (Sharable Content Object Reference Model), or **ATA Spec 104** (Air Transport Association). infoWERK also takes part in panels of experts such as ADL (Advanced Distribution Learning Initiative), AICC (Aviation Industry CBT Committee) and others defining international standards for the development of web-based training programs. infoWERK is therefore actively involved in the determination of new standards, and can immediately react to them, thus ensuring the production of highly sophisticated state-of-the-art programs.

Design and methodological/didactic guidelines

Design guidelines

Design is an important aspect in the development of infoWERK MBT. infoWERK strives for **simplicity** in style and wording. This means that the design, including animation, is kept as simple as possible, so that the learner is not overtaxed by too much reading and looking.

As for the **colour selection** - the brightness and the reflectance between type and background are well balanced. The format is **clear** and **logical**. Various aids such as numbering systems, headings, indentation and spacing are used to promote a logical presentation. **Screenshots** are **kept short** so that different hardware and access speeds don't affect the loading time.

In the **navigation,** users can operate the program without assistance. Furthermore, users are able to exit the program, return to the menu or move to another section as necessary. The controls of audio and text are easy, intuitive and user friendly. The **graphics and pictures** of the programs are consistent and supportive of the contents.

infoWERK MBTs can be easily **updated**, so that the trainer can edit text, graphics and audio without assistance. In order to carry out changes in the content, the trainer can search the database for particular data sets, and then quickly and concisely change the content.

Methodological/didactic guidelines

Since learning with a multimedia-based training requires the learner to concentrate, it is important that the **text and audio** are **simple**, **clear** and **concise.** Only necessary information is transmitted to avoid longer processing time and de-motivated students. It is also important to take the students' **learning speed** into consideration. This is why our programs often provide a **focused introduction of breaks** into audio and animation.

As far as the **presentation of learning content** is concerned, our training provides a **logical sequence** of explanations -- **from the general to the specific**. This promotes understanding and leads to comprehension of relationships, processes, and operation. We also emphasize using language rules when composing the audio text to ensure that the learner can understand the audio from the outset.

In order to deepen the transmission of contents to the learner, infoWERK strives to develop lucid programs that are relevant to the present times, **link to the trainee's previous knowledge and experience**, and refer to real life. The aim is to strengthen the trainees' self-reliance and autonomy, to encourage individualization and differentiation, and to support the learning progress.

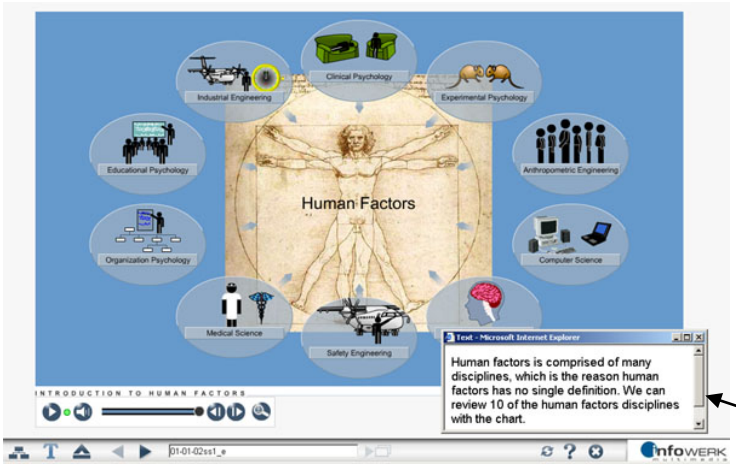
In the interactions**,** a **variety and adequateness of interactions** is guaranteed. Instructions provide the guidance required to interact - and if the user's input is wrong, the program handles the answers tolerantly. In addition, the interaction contains a **method of inquiry** that promotes learning (e.g. Questions that the user had trouble with are stored and re-presented to him for another review and / or upon the lesson completion.) The test items address the stated objectives.

Feedback is also an important element within infoWERK's MBT. Learning takes place regardless of the user's response, since the feedback is positive, motivational, user sensitive and immediate. We do not limit feedback to right/wrong or yes/no, but include **motivating comments** and **detailed explanations** why the answers were correct or incorrect.

Multilingual Training Products

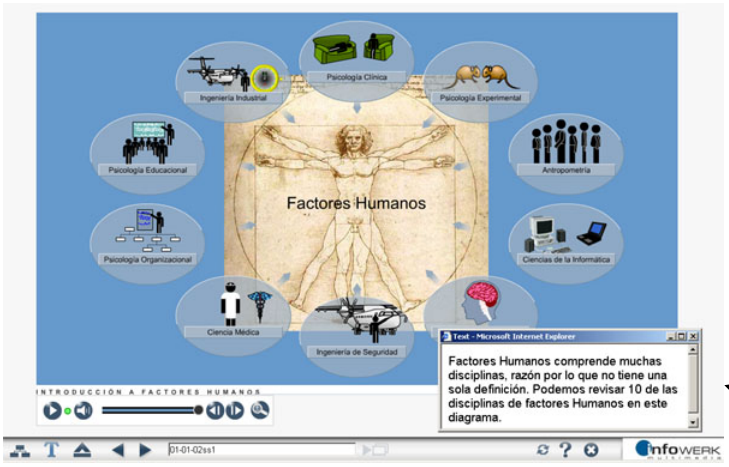
Programs can be provided in different languages. Especially for larger companies, multilingualism is an important factor, since their employees may be all over the world and may speak different languages. The trainings, however, require the same quality.

We have already developed several multilingual projects. Generally, you as customer can decide if the complete program is either developed in more than one language (see Example 1 and 2 below) or if only the spoken text appears in another language within the text box (see Example 3). In this case the training (including the audio voice) could be for example in English and the text appearing in the text box in your mother tongue (e.g. German). See the following examples:

1. 

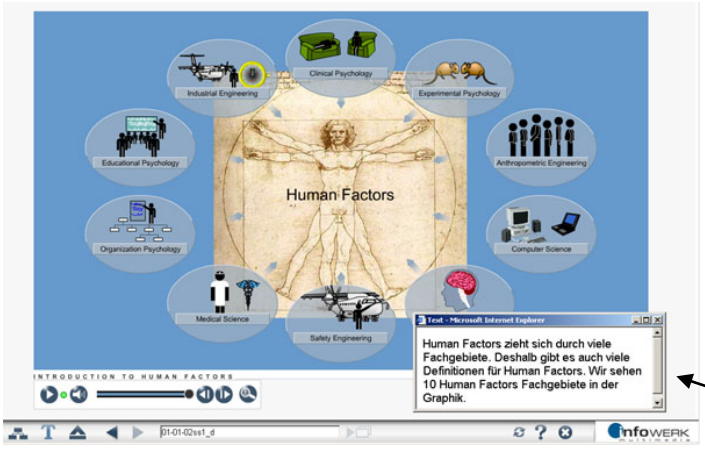
Example 1:

Training in **English** with **English** in Text Box

2. 

Example 2:

Training in **Spanish** with **Spanish** in Text Box

3. 

Example 3:

Training in **English** with **German** in Text Box

Learning efficiency – Case studies

Especially in the field of education and further training, e-learning is an ideal tool for transmitting knowledge consistently, flexibly, interactively and tailored to individual needs. However, it is helpful to know **how efficient this training method is in comparison with traditional classroom training.**

infoWERK is highly interested in the actual learning outcome. We work together with **international research organizations** to conduct studies on this subject. Recently, a case study was carried out by **Fraunhofer Institute in Berlin** on the **„Educational Efficiency of multimedia based training programs (MBT)"** (to see details and an excerpt of the study check our website under 'Benefits' www.infowerk.systems).

In general, infoWERK wants to emphasize that **e-learning presents only a part of the whole learning process**. The whole training package very often should consist of a **combination of e-learning, conventional training, discussions in the classroom and practical training** to reach maximum learning efficiency.

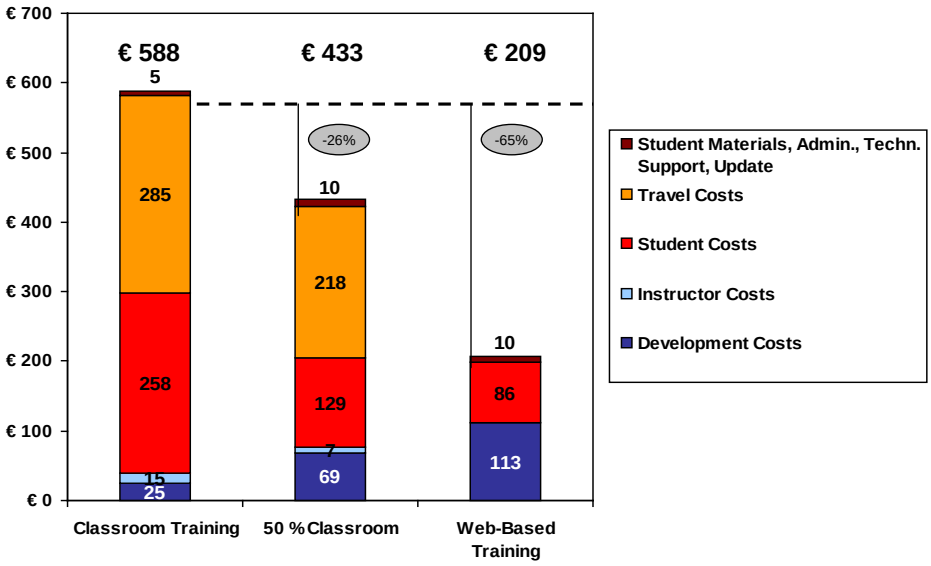
Cost saving factors

For most companies, cost reduction is a driving force when planning new strategies. It is a fact that the integration of web-based training systems reduces training delivery costs significantly. We as WBT producers can assert this because our customers have proved it.

See the following table which gives you a **cost example for a 2 days classroom training for 800 students, compared to a 'Blended Training' consisting of 50% classroom training and 50 % web-based training, and a pure Web-based Training Solution:**

	Classroom	50% Classroom	Web-based Training
Development Costs to create courseware	€ 40.000	€ 110.000	€ 180.000
Training Costs			
+ **Number of Classroom Days**	**53**	**26**	**0**
+ **Instructor Costs**	€ 23.320	€ 11.660	€ 0
+ **Student Costs**	€ 412.800	€ 206.400	€ 137.600
+ **Travel Costs**	€ 456.000	€ 348.000	€ 0
+ **Student Material**	€ 5.600	€ 2.800	€ 2.800
+ **Student Administration Costs**	€ 2.464	€ 1.232	€ 616
+ **Technical Support**	€ 0	€ 6.000	€ 6.000
+ **Updates of Technology**	€ 0	€ 6.000	€ 6.000
Total	**€ 940.184**	**€ 692.092**	**€333.016**

The figures show that when considering only the development costs, the traditional classroom training is the most economic solution. If you look at the total training costs, however, they are almost 3 times higher than for the web-based training system due to high travel and accommodation expenses and not to forget the costs for the replacement workers. If you convert the above figures to a single student, the **training costs per student per day** are as follows:



Cost expenditure

If you are interested in purchasing **off-the-shelf products** such as specific pilot or aviation trainings, see our website for detailed product information (www.infowerk.systems) and then call us or contact us at info@infowerk.systems for price details.

To estimate the production costs of a web-based **custom courseware development**, we must first evaluate the material to be implemented. Our experience shows that **1 hour *"Runtime"*** (the mere process time of the training program, not taken into consideration repetitions, pauses and learning time) can be equated with **3 hours** "***Average Processing Time"*** (the average learning time) which can be compared to **one day of conventional classroom training**.

WBT content development is based on the following estimates:

- 30 % Storyboarding and research
  - *20 % support of the production team*
  - *10 % Subject Matter Experts*
- 60 % Production (graphics and animation)
- 5 % Audio and quality control
- 5 % Programming

To contact us

We can be reached through our web-site, by e-mail, phone or fax. Our web-site is full of information about our company, products and services, benefits and general e-learning information. Please contact us in order to explore the exciting new challenges of e-learning!

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