

Computer-assisted learning - Fun and usefulness combined

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The learning content management system »EDMedia« enables authors of learning materials, to arrange courses in modules for flexibility and user-friendliness. © Fraunhofer IDMT

(PhysOrg.com) -- Electronic learning systems must be easy to use, flexible and interactive so as to enable knowledge to be conveyed successfully. Researchers from the Fraunhofer-Gesellschaft will be showcasing software at CeBIT from 3rd - 8th March, that allows learning programs of this type to be produced. They are also working on producing special knowledge gateways for potential users in various professional, for example architects.

Electronic media are playing an increasingly more important role in education and training. School and universities are availing of these new

educational channels, and there is also an increasing level of vocational training performed via the computer.

Crayons - new learning, fast and user-specific

Teachers can use the Crayons software tool, as developed by experts from the Fraunhofer Institutes for Information and Data Processing IITB in Karlsruhe. Using this software they can create professional courses used by pupils to repeat the material at home and deepen understanding through exercises. Various components can be interlinked with one another: text, images, videos and exercises. "One advantage of Crayons is that it can be used completely intuitively", says Daniel Szentesi, the leader of this project. "The author is given editors for each exercise that function like existing programs such as Word. There is no painstaking effort required of the user in learning how to operate it." This made it easy for the tutor to link information with particular applications using physical principles and examples. He arranged the professional course in such a way that it is adapted to the preferences of his pupils who like to surf the internet and make checks against real life examples.

Because Crayons can be used without any prior programming knowledge, pupils also use the software for putting together coaching courses for their friends. Crayons functions like a user-friendlier version of Wikipedia. Texts, forms, animations and images taken from the tutor's course can be used completely or as guidelines. To be able to create or learn the content, the author or learner only requires internet access and a browser such as Internet Explorer or Firefox.

"Crayons is suitable for schools, universities and vocational training", says Szentesi. Using this tool, the author can adapt the learning program to the predispositions of the learner and provide him/her with optimum support. He/she can choose between various didactic concepts: Should a possibly faster learning objective be selected? Does the learner have a

more playful attitude? Is he/she more interested in text or in images?

EDMedia - Training made easy

To keep themselves up-to-date, many employees visit regular vocational training courses. Travelling to these is now no longer necessary: they can receive training right at the workplace on their own computer. To enable this, researchers at the Fraunhofer Institute for Digital Media Technology IDMT in Ilmenau have developed a learning content management system:

Educational Media (EDMedia). "It enables authors of learning materials, to arrange courses in modules for flexibility and user-friendliness", explains Dr. Fanny Klett, head of the project. "Users can draw on all types of media, such as text, images, graphics, video film, virtual worlds and simulations."

To achieve this the author does not requires a dedicated programming language, but can instead enter content via and user-friendly interface and create links. This will arrange the contents into a paragraph-based format, with the author adding text to each point and selecting the appropriate visualisation or acoustic information. The material can be worked through either on a chapter-by-chapter or explorative basis: i.e. the user can surf freely through the learning matter and group contents depending on particular interests. At the CeBIT the IDMT researcher will, among other things, be demonstrating a learning program using image processing. Using examples, it will illustrate how images can be digitally processed. Other learning programs that will demonstrate are concerned with optical and acoustic phenomena.

"Our software is universal", says Fanny Klett, "it is not independent of browser and the platform. It incorporates all fundamental standards and enables contents to be re-used in another context." It is also designed to be used by the disabled: there are versions created for the blind and

people with hearing difficulties - a service that is currently unique anywhere in the world.

The researchers will be demonstrating their developments from 3rd - 8th March in Hanover at the CeBIT, the trade show for information and communication technology.

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