Knowledge about ecological product design is becoming more important for employees of manufacturing companies. Because of organizational reasons these employees often are prevented from attending courses of this topic. E-learning can be a solution for this problem. We describe the design process for an e-learning system about ecological product design.

The Ecodesign e-learning system has been implemented from scratch using the open source platform Zope and Python. The basic functionalities it offers are access to examples, various kinds of material, and communication with other members of the group or teaching staff (utilizing discussion forums, chat and e-mail). Consequently, it consists of three sections: examples/tasks, materials, and communication. The main concept of the system is to present the learning material in an interactive manner which emphasizes concrete examples. The trainees, for example, have to improve the design of an electrical water kettle according to ecological standards.

To avoid high drop-out rates we adopt two strategies: blended learning and active tutoring. The latter means that tutors support the learners online. They organize electronic meetings and answer all the questions the trainees have when they are not in the face-to-face meetings.

Our experience indicates that constant testing can help to make the design of an e-learning system clearer and easier to understand. This is especially important because the ideas of content providers, potential users, and e-learning experts often diverge quite considerably.

Ecodesign: Development and Testing of an E-learning System

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How to Make ECODESIGN Content

- Analysis of Pre-Implementation User Tests
- Experts' Knowledge/Input
- Discussion Process (Developers and E-learning Experts)
- Definition of a Pseudo-Markup-Language
- Guidelines for Content Providers
  Hypertextual Structure
  Inclusion of Images and Movies
  Avoidance of Scrolling
  From-Bin Transfer of Large Documents

Interviews

- Extensive Interrogation (1+ hour) of 5 Users
- Demonstration of Problems by Subjects
- Rhetorical Transcription and Analysis of Interviews
- Encouragement to Keep Diverse Navigational Approaches
- Basic Necessity to Revise Learners' Tasks
- Shorten and State More Precisely
- Revealing of Important Navigational Trivia
- Consequent Naming of Nodes
- Feedback on Technical Problems, Implementation Bugs, ...