

# **CEDEFOP (The European Centre for the Development of Vocational Training) and Adaptive Hypermedia**

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## **DESCRIPTION OF RESEARCH GROUP**

Cedefop is the European agency that helps policy-makers and practitioners of the European Commission, the Member States and social partner organisations across Europe make informed choices about vocational training policy.

Cedefop can provide you with the latest information on the present state of and future trends in vocational education and training in the European Union. "Cedefop" is the French acronym of the organisation's official title, European Centre for the Development of Vocational Training (Centre Européen pour le Développement de la Formation Professionnelle). The [European Training Village](#) (ETV) is an interactive website where you can participate by sending news, take part in virtual conferences, exchange information, register in mailing lists, if you are involved in any aspect of vocational training".

Information on recent developments in all Member States published in Cedefop Info, a newsletter published in English, French and German. Studies and reports on vocational training issues, such as quality, transparency, the accreditation of non-formal learning, sectoral trends, new qualifications, mobility and funding. Study visits in other Member States on specified themes of Vocational Education and Training. The opportunity to publish your research in the European Journal "Vocational Training", which serves as a platform for debate in the field. The opportunity to participate in seminars and workshops where you can engage in debates with researchers, social partners and decision-makers on specified issues. Information and documentation on vocational training in the EU and EEA via its Library and Documentation Centre. Descriptive monographs on the vocational training systems of all Member States. The chance to participate in networks which collect and disseminate innovative solutions to training problems. Comparative statistical information on VET in the Member States. In all its activities, Cedefop seeks to serve as a link between its target groups: policy-makers, social partners, researchers and practitioners in VET.

Cedefop opened its e-learning website in line with the launch of the eEurope initiative 2000. E-learning has grown to such importance that Cedefop provides a set of specific services of significant interest to its residents. The aim is to create a resource centre of information about e-learning, primarily for training practitioners and use the ETV as a space to develop an active community with a shared interest in e-learning. The ETV site now hosts an extensive knowledge base including case studies, e-learning opportunities, general information, a news centre, surveys, technology information, Faq, elearning and people with disabilities etc.. The ETV maintains a "watch" on e-learning specifications and standards. Consensus around the adoption of common standards at a European level is essential for building a coherent e-learning community of users and suppliers in Europe. The ETV aims to provide information on global developments and reflect on the impact on Europe. Information on specifications and standards will be provided as it

becomes available. Cedefop will play an active role in the development and more critically, the dissemination of standards. Other plans include building resources in specific industry sectors and working with partners to populate the database.

The overarching objective of Cedefop's Mid-Term Priorities 2003-2006 is to support the implementation of lifelong learning in an enlarged European Union. In 2003, Cedefop is undertaking a series of special activities to highlight this commitment, including an international conference on Policy, Practice and Partnership: Getting to Work on Lifelong Learning (2 and 3 June in Thessaloniki ) during the Greek EU Presidency. As part of the preparation of this event, four thematic workshops were held at Cedefop during Spring 2003. They provide background information for conference workshops that will develop the themes the thematic workshops have addressed. This is the conclusion of the thematic workshop on adaptive hypermedia systems and their role in lifelong learning. Cedefop chose this topic in view of the high European policy priority that has been given to eLearning over the past three years. Adaptive hypermedia are at the driving edge of technical innovation in this field, which is now beginning to engage with real-world education and training practice, both in terms of designing curricula, developing new kinds of courses and in prompting renewal of teaching and learning methods.

**The new electronic era is full of promises and capabilities:**

- 1 Fast multimedia distribution today is done via broadband wired and wireless connections without bandwidth limitations
- 2 The World-Wide-Web is established as information supplier and communication facilitator
- 3 Computers more and more are perceived as catalysers to what is generally considered to be a knowledge acquisition procedure

Experience from current e-Learning applications has so far brought up some very encouraging points, as well as some shortcomings that need to be addressed. As classrooms are getting online, learners call for higher levels of control over the learning process; in parallel, learning situations become more realistic. Nevertheless, a successful online classroom combines information technology with appropriate pedagogy

1. Online resources and services boost student interest and motivation in the classroom through a greater diversity of learning goals, projects, and outcomes. As a consequence, the classroom is extended to online learning communities with the potential to support or even challenge the locally-established curriculum.
2. Educators use online technology as a driving element of an educational reform. The education of educators is broadened to include just-in-time and/or collaborative learning.

Recent surveys with respect to the post-secondary classroom have made it possible to identify the following trends:

We are before the emergence of a new mixed mode of learning: face-to-face and online learning activities in which information access is more direct, interactive, and flexible.

- 1 Social interaction recovers its importance in the learning process.
- 2 The learning community, supported by networked technologies, is a new collaborative learning arrangement being tested in a great number of ways.
- 3 The university as an institution is invited to adapt its activity to new higher education needs. Computer resources are used to enlarge the notion of performance as regards teaching and learning on university campuses.
- 4 The computer linked to other computers constitutes an important element in the modification of academic administrative procedures at both the micro and the macro levels.

Putting all the above together we have a dialectic situation: from the one side, we have learners and their demands in knowledge and information and from the other hand we have knowledge suppliers which contribute to the construction of knowledge content as well as to its delivery. The constantly incrementing repository of knowledge content items must be well organized and characterized in order to facilitate reusability, functionality and the possibility of being encapsulated to many platforms. The possibility of various kinds of adaptation of hypermedia content in education, gradually becomes a demand.

The new era of learning is decentralized. Knowledge is pulled by learners, who may have different goals, background knowledge or cognitive styles. Learners demand environments tailored to them. To accomplish such an endeavour, data must be collected about learners, in order to build a profile according to which adaptation decisions are going to be made. The prospect of achieving a truly student tailored environment is near to be met. The whole education and learning process is therefore put upon a new base. An "Education Modelling" language is now a serious consideration.

So, is Educational Adaptive Hypermedia yet another short-term buzzword, or is it a discipline that will change the face and the effectiveness of e-Learning? Many research efforts indicate that the latter is the case, yet much remains to be done. Several obstacle, trends and challenges are worth to be noted.

Adaptive Hypermedia development demands **interdisciplinary efforts**. Researchers, designers, educationalists, domain experts and software engineers have to collaborate. A common "language", consisting of well-known and understood terms, standardized methods and practices and consensus in processes, should be defined. New established vocations should be considered, in existent vocation intermediaries, combining pedagogy, technology and authoring.

**Instructional practices and theories should be re-examined** and re-considered in the context of Adaptive Hypermedia systems. The way that can be effectively link to systems developing must be defined.

**Standardization** efforts should be accelerated focusing on final data and metadata scheme for content, user model and adaptation rules and methods.

**Evaluation schemes** and performance indicators must be developed and applied to existent Adaptive Hypermedia systems to assess their effectiveness and reveal what modifications or improvements are to be applied, as well as to provide recommendations to forthcoming systems.

The more Adaptive Hypermedia Systems go **from laboratories out to the real world**, the more experience and maturation of the field will be gained to the benefit of Life Long Learning purposes.

**Learner modeling should advance** in examining the variety of learners cognitive and learning styles and accommodating the diversity of demands and needs the whole population of learners may have.

**Professional ethics and responsibilities** should be defined to guarantee qualitative learning experience, protect authors' rights and learners profiling data.

The dominant **technical obstacles** that need to be addressed are the following:

- 1 Implementation techniques
- 2 Authoring facilitating tools
- 3 Conversion from static to dynamic content

- 4 Automation of the presentation
- 5 Connectivity and access

### **FUTURE ACTIVITIES**

The objective of the VC is to promote research and actions in the field of Educational Adaptive Hypermedia (EAH) in Europe. Academics, researchers, experts, technology integrators, decision makers, tutors and policy makers will have an opportunity to exchange opinions and experiences, discuss open issues in both technical and educational/social aspects of EAH, organize events, transfer know-how and co-ordinate common actions and partnerships in the European educational and vocational training research area.

The proposed VC aims to become a live discussion forum for the coordination of activities that promote research and practice in the field. It is expected that this VC will motivate and promote actions such as conferences and dissemination of know-how, research results and best practices. It is also expected that European co-operation in the development/evolution of educational platforms, targeted case studies, cross-national actions, as well as coordination with other European initiatives in Education, will benefit from the operation of this VC

<http://cedefop.communityzero.com/hypermedia>.

