Abstract
The vision of ubiquitous computing suggests the seamless and unobtrusive availability of computer-based services. It is debatable whether e-learning has reached or is soon able to reach such a mature stage. The paper argues that ubiquitous information and communication technology does not constitute in itself a sufficient learning environment for everyone. Instead, it seems to be a long and winding road from the availability of web-based technology to a culture of distributed and life-long learning. Against this backdrop, the paper seeks to critically assess developmental aspects and obstacles of present-day e-learning, from an analytical as well as a practical perspective. In face of the complexity of the task national R&D-Projects in e-learning are seen as important exploration areas in the quest for sustainable changes in education. With the German federal capstone project “Virtual University of Applied Science” an example is presented that provides the practical background for the discussion of e-learning issues. Experiences with new forms of learning scenarios conclude the paper.

1. Introduction
As the great “enabler,” information and communication technology (ICT) contributes to turning computer-supported learning into an ubiquitous option for the anytime, anywhere pursuit of studies, beginning at elementary school on to high school and to college. Following the professional discussion over the past years, the conceptual transformation of learning institutions to elements in a game of global competition in ubiquitous services seemed inevitable [18]. Innumerable universities felt obliged to devise strategies in order to cope with the challenge and to reposition themselves [for a portal approach see 16]. E-learning as the computer-based expression of pedagogy was expected to provide just the right means for this end.

However, on closer inspection of the available options and of their—frequently just implicitly stated—justifications for implementing various degrees of computer use, one is bound to notice that, apart from the progressive dissolution of traditional learning environments and the growing uncertainty of the educational institutions as to the route of development to be taken, there exists little clarity and even less unanimity as to the future canon of learning options. This uncertainty and the subsequent lack of demand has already led to a shakeout in academic as well as business enterprises, where huge hopes were put in all kind of “virtual” learning institutions [14].

2. From Education to E-Learning: The Role of ICT
Due to multimedia and the establishing of global networks, IT creates an innovative potential for under- and postgraduate education now generally subsumed under the notion of e-learning, the collective term in common use for the various forms of computer-supported learning. In addition, the vision of knowledge being available on demand from a utility line seems to have come close to technological feasibility.

However, we should address the question whether we really are so close to that finishing-line and which opportunities and pitfalls are looming ahead for the structuring of novel modes of studying.

3. Experiences from a German Federal Project
From 1999 through 2004 the German Federal Ministry of Research (BMBF) is sponsoring a project for the “Utilization of the Worldwide Available Knowledge for Education, Further Education and Innovation Processes”. In this field, a consortium of universities of applied sciences combines forces to gather new experiences by finding concrete solutions to issues of material and institutional reorientation. The project named “Virtual University for Applied Sciences in Business, Informatics and Economics” (VFH) was selected as one of then five “capstone” projects from a total of 251 proposals from a wide variety of submitters. One of the project’s essential objectives is to create sustainable conditions for an offer of online courses that would be collectively supported by participating uni-
versities (cf. www.oncampus.de). The subsidy allocated to the project amounts to approximately € 25 million.

As of winter semester 2002/03, approximately 320 students —almost all of them in full- or part-time employment—are registered in “Media Informatics” at different campuses all over the northern and eastern part of Germany. First graduates are to be expected for 2004 and will be awarded the title of Bachelor of Science in Computer Science.

Preliminary experiences from the course offers at the different sites confirm reported findings from the e-learning scene: without exception the need is felt for the intensive early counseling and tutoring of the students. By no means does this imply traditional face-to-face tutoring, but any stable communication channel, preferably of high audio quality, seems to be adequate. Being just three semesters in the curriculum, it is still too early to assess the institutional quality, i.e. the accreditation of the awarded degree and the occupational prospects of the graduates. One area of shortcomings, when one compares face-to-face with online learning, is the availability of informal channels for communication. What is very easy in day-to-day learning might be hard to solve in virtual spaces, namely to provide support for the non-formal and spontaneous exchange between students [3].

4. Summary

In view of the complexity of the challenge to create a computer-supported learning culture, it makes little sense to structure the levels of intervention in isolation from each other, as it is often done, or from a bureaucratic ivory tower. Neither technology-centered nor methodology-centered approaches can guarantee the success and the practical applicability of learning environments and of their institutional implementation. That is why comprehensive and sustainable long-term projects such as the example presented in this paper come into play. They can experiment with learning scenarios that comprise technology and pedagogy, disciplines that are separable in an evaluative view, but are inevitably intertwined in praxis.

5. References


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