

Internet-studies communication and information technology (CIT)

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Abstract

About 300 students taking the extension study course Communication and Information Technology (CIT) are studying exclusively via the Internet. New forms of communication using the Internet were developed and implemented, replacing all the traditional study components. The content of the CIT subject provides its own teaching aids. Students describe their experiences with the Internet-studies very positively and colleagues and friends join the course.

Keywords

Communication and networks, role of CIT

1 DEVELOPMENT

In 1995 the first 56 full-time employed postgraduate students commenced a new way of studying in a course conducted by Professor Dr U. Hübner, holder of the chair of 'Computer Networks and Distributed Systems' at the Faculty of Computer Science. The lectures were provided in the form of hypertexts with links to chosen Internet sources, and were distributed via monthly e-mail packages. According to their own statements, the students required approximately ten hours per week to work through the study material at home on their own computer. This included four hours per week on Internet exercises, the so-called on-line time. For every ten students one personal tutor was provided to support the e-mail exercises. The students sent their solutions to the exercises and questions on the subject matter to the tutor.

2 APPLICATION OF CIT IN THE INTERNET STUDIES

Computer science is especially innovative in the field of development and the application of modern tutorial systems (Schubert, 1995) and CIT in the educational domain. Providing lectures in form of hypertext documents can be considered as the first step to extensive multimedia applications. But this mode of delivery is still clearly limited by the domestic equipment possessed by the students. The exchange of experience via internal e-mail lists for purpose of study is completely new. The students' need to talk and take part in technical discussion on a large scale is made possible by the use of e-mail. This application of CIT proved to be very sensitive with respect to the number of participants as well as to the required technical guidance. In an extreme case there is no discussion at all. This can happen equally with groups that are too small or too large. In particular, hasty correcting by the tutors has a demotivating effect.

A new initiative is the self-assessment of individual study progress through test files. After initial resistance to the use of electronic supervision the tool is accepted and intensively used. The self-study program is designed to prepare the students systematically for the demands of the examination by solving measured quantities of exercises within a given time. To expand the self-study program, answers to exercise questions can be entered into an answer scheme analogous to a database. The tutors use the tool to assess the students' answers or to add corrections. In part two of the study, the main emphasis is on experiments in the laboratory of the Technical University Chemnitz via Internet. Therefore, the project part 'Teleguided experiments' is the subject of the research project 'Internet distant study'. Even now this part permits the learning environment for network management and planning in an isolated experimental environment that has no connection to the rest of the network. A defined initial position can be guaranteed for each practical participant even after massive control defaults of preceding students (Schubert, 1997).

3 EXPERIENCES WITH THIS FORM OF STUDYING

Very time intensive

The time required for the development of interactive teaching aids is often seriously underestimated. For the present there is no saving of staff or administrative expense for the university. The expenditure on preparation is many times the preparation time for a conventional lecture or exercise. The high expenditure on student assistance cannot be covered by the planned four hours per week for ten participants. The triple expenditure of time has been watched during complicated study phases, e.g. the beginning of the first part.

Rewards

Why does the university teacher face such burdens for apparently unattractive tasks? The author sees two arguments.

- The scientific engagement in the reconnaissance and the exploration of new ways of studying through the application of CIT.
- We are encouraged by the positive response and results from the special target group of students for which any other form of studying is out of question. The study success rate of the first graduates is approximately 80%, which is very good for employed postgraduate students.

Communication problems

Because there is a demand for postgraduate university qualifications, students from almost all professional groups - from the young graduate to the university professor - are studying in this extension study course. This produces communication problems resulting from the different technical languages and previous knowledge. Even the age difference (from 23 up to 63 years) produces new demands for education. The group discussion of one study year makes those variations in experience of life and communication habits very clear. Because at the moment the largest group has 129 participants it is an important task to overcome carefully the reluctance of the majority of the students to express ideas publicly for fear that they might contain mistakes.

E-mail as a leveller

The e-mail of a student does not show the age and qualifications of the writer. In addition, there is approximately the same amount of knowledge and ability in the subject being studied, giving rise to a kind of communal spirit. The students help each other.

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5 BIOGRAPHY

Sigrid Schubert is an assistant professor in the Department of Computer Science at the Technical University of Chemnitz, Germany. She studied mathematics, physics

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