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Administrative Processes of E-learning Courses in a Nationwide Polytechnic Network

E-learning is one of the mainstreams in recent educational development and research. A lot of attention is given to pedagogical issues which of course are the main focus. However, when e-learning is implemented also many kind of practical problems have to be solved. The complexity of the problems increases when several institutions are involved in the teaching and learning processes. New kind of administrative processes have to be developed in this situation. This paper describes the administrative processes required when several institutes arrange e-learning courses in cooperation. The paper is based on experiences of Tietie cooperation.

Tietie cooperation

Tietie cooperation began in 1995 as an experimental project between five Finnish polytechnics: Helsinki Business Polytechnic, Jyväskylä Polytechnic, Kemi-Tornio Polytechnic, Oulu Polytechnic and North Karelia Polytechnic. These polytechnics are situated from Lapland to Helsinki. The project was funded by the Ministry of Education. The project ended December 1999 and continued as mutual cooperation funded by the polytechnics themselves. In August 2000 Tietie cooperation expanded by six polytechnics as Vaasa, Pohjois-Savo, Turku, Lahti, Kymenlaakso and Häme Polytechnics were accepted as partners.

Tietie is an acronym from Finnish words meaning Information Technology Education using Information Technology. The participants of the cooperation are mostly degree programmes of Business Information Systems in bachelor level education. Tietie cooperation was established to increase local learning resources and to use the latest information and communication technologies to free learning from the constraints of time and space. Tietie cooperation offers many courses that would be impossible to implement in all local polytechnics because of economical reasons or lack of competent lecturers. Tietie courses are usually elective courses, and Tietie cooperation has remarkably enriched the number of available courses in the participating polytechnics. The courses are distance courses based on web technology.

Being IT lecturers (Information Technology) or IT students the participators were familiar with the IT technology. They also were interested in learning and using new technologies like Internet, web pages, e-mail, newsgroups, chat, ISDN-based multinode video conferences and learning platforms (e.g. Lotus Learning Space, WebCT, BlackBoard). Nowadays these technologies are in every day use but in early and mid 90's they were new innovations.

On 16 April 2002 Tietie cooperation was awarded with the Ministry of Education and National Board of Education Online Learning Development Quality Prize.

The polytechnic degree in Finland is 210 ects (3,5 years). The extent of a typical Tietie course is 3-5 ects. A student may choose one or more Tietie courses during his/her polytechnic studies. Each



polytechnic is responsible for 1-3 courses: developing, delivering and evaluating a course. In the academic year 2001-2002 Tietie offered a total of twenty-five online learning courses open to all students in the participating polytechnics. By the end of 2001 Tietie had already registered 1342 course completions. In 2002 there were 508 students participating in Tietie courses, and 396 of them (78%) completed the course.

Tietie cooperation allows the polytechnics to operate independently. A polytechnic offers a course to all the students of the network. In one course there are typically students from several polytechnics around Finland. The students and the lecturer of the course do not meet at all in person. All of the communication is carried out in computer networks.

Administration of Tietie Cooperation and the Roles of the Participants

The administration is complicated and several problems have been solved, such as:

- How to introduce courses to the students?
- How a student enrolls on a course?
- How to choose students to a course?
- How to communicate the marks to the students and their home polytechnics?
- How to arrange the invoicing between the polytechnics?
- Who pays the lecturer's salary?
- Who has the copyright of the studying material that is usually in digital form?

During the cooperation we found out the following roles for persons involved: a student, a local coordinator, a lecturer of a course, and a network coordinator. In addition, an information system is needed to share the administrative information. The administration is designed to be a light but efficient process respecting the independency of a polytechnic and an individual lecturer.

Tietie cooperation has one network coordinator. He/she is responsible for the practical administration of the whole network. When a new Polytechnic joins the network a contract has to be made. The network coordinator takes care of the contracts. He/she is a contact person of the local coordinators, and he/she informs both the students and lecturers about courses by updating Tietie www pages. He/she also takes care of collecting the number of participating students for invoicing. He/she arranges once or twice a year a meeting of the local coordinators to develop the cooperation.

Each participating polytechnic has a local coordinator with whom the local lecturers and students are in contact. He/she promotes the courses to lecturers and students, he/she accepts the enrolments of the local students to the courses and the grades of completed courses are sent to him/her to be updated to student records. He/she also informs the accountant of local polytechnic about invoicing.

In a participating polytechnic there are one or more lecturers who are involved with Tietie courses. The role of a lecturer introduces the following tasks:

- Developing the studying material of the course (www pages, material in the learning platform etc...).
- Making a description of the course in the web to inform all interested students about the course.
- Informing the students of the course when the course starts, usually by e-mail.
- Teaching in the course using web technology, sometimes also on-line meetings and telephone meetings.
- Evaluating the students and informing the local coordinators about the marks.
- Often a course includes also a written examination. The examinations are organized in each polytechnic with the help of local coordinators.



The students usually do not meet face-to-face the lecturer of the course. They work individually or in local groups during the course, and they send their assignments to the lecturer or publish them to the whole group in the learning platform. A student has to be initiative and self-directive to success in this kind of studies. In addition, both students and lecturers have to have sufficient computer skills.

Administrative Processes of E-learning Courses, Case Tietie cooperation

The concept of process is derived from chemical process: a final product is a result of a series of chemical reactions. A business process resembles a chemical process: a useful result is a sum of interconnected activities. There are several business processes in an organization, and typically the processes form a chain where the outcome of a process is often the input of the next process. A process has to produce added value whether to the customer or the other processes. Process thinking is nowadays emphasized also in quality management literature. Process approach is useful when complicated chains of activities and many parties from different organisations are involved. (Lecklin 2002, Cianfrani 2001.)

In this paper process approach is used to illustrate the administrative activities of Tietie cooperation. The parties involved are the following:

- network coordinator (one in the whole network)
- local coordinator (one in each polytechnic)
- lecturer (several in each polytechnic)
- student (several in each polytechnic)

The following processes were identified:

- collecting the course list of the next term
- students' enrolments
- teaching and studying in a course
- calculating statistics and invoicing

The course list of the next term is required before the students can enrol in the courses. The course list is collected and then it is published in Tietie web pages (Figure 1).

The processes follow each other during two terms as shown on Figure 1. Before teaching of a course can start the preparations have to be carried out during the previous term.

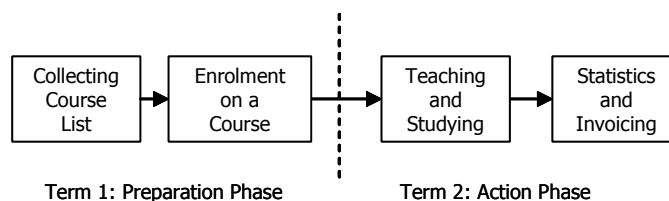


Figure 1. Processes and terms

The course list of the next term is required before the students can enrol on the courses. The course list is collected and then it is published in Tietie web pages. (Figure 2.)

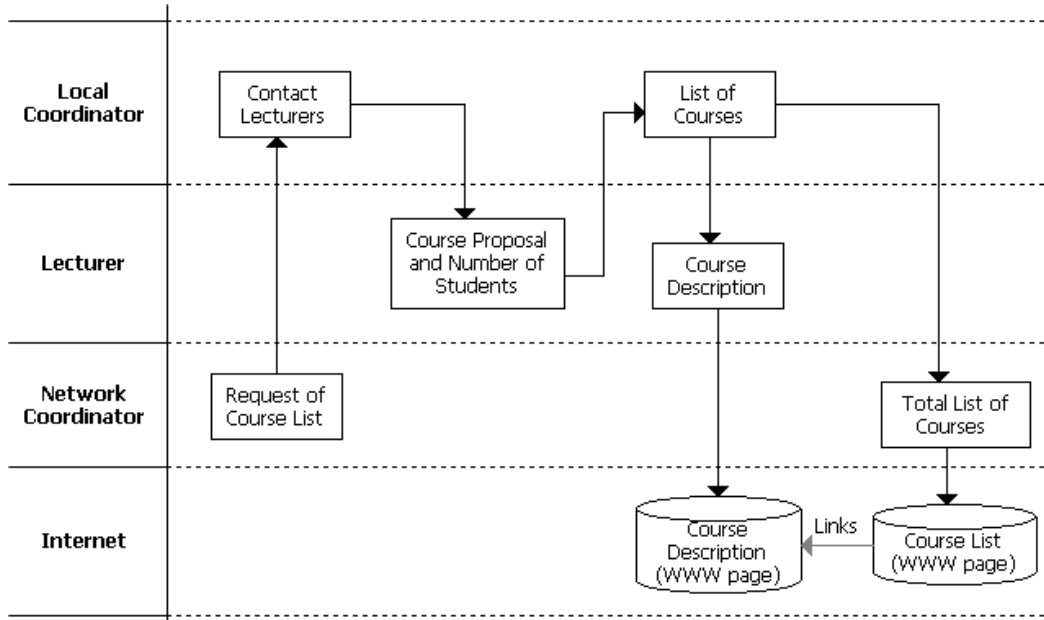


Figure 2. Collecting the course list of the next term

The Tietie network coordinator sends a request to local coordinators in each partner polytechnic for a course list. The local coordinator contacts with local lecturers to form a list of possible Tietie courses. The polytechnic decides the courses they are going to offer. When the course is chosen to be offered as a Tietie course the lecturer writes the course description as a web page and publishes it on the local www server. The address of a description is sent to network coordinator who updates Tietie web pages to form next term's course list.

When the course list is published, the students are able to enrol to the courses. The outcomes of the first process (course list and course descriptions) are the input of the second process (enrolment, Figure 3.).

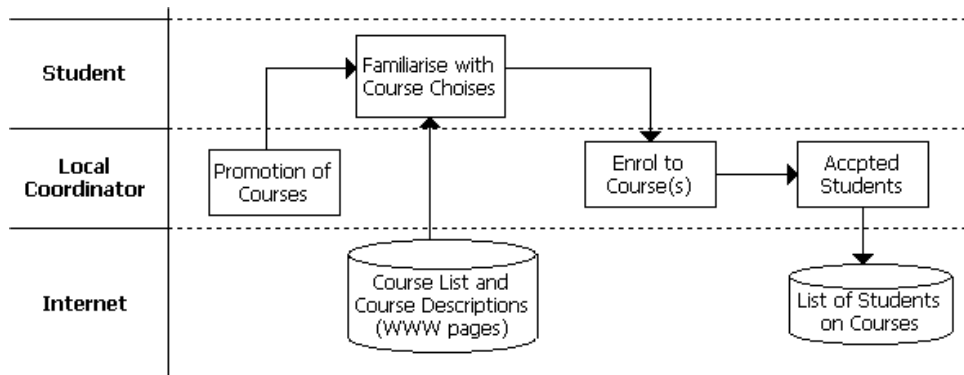


Figure 3. Enrolment on a course

The local coordinator informs the local students about Tietie course list web page. The students around Finland have to know only one Internet address where they can find the Tietie course list. Usually this address is also available as a web link on a local polytechnic's web page.



The local coordinator receives the enrolments of the local students. He/she checks if the course can be accepted to the student's study plan. Then he/she writes the enrolments to the BSCW Shared Workspace Server which is administrated by the network coordinator. The BSCW system (<http://bscw.gmd.de>) supports collaboration by providing shared workspaces over the Internet. A shared workspace allows storage and retrieval of documents and sharing information within a group.

The output of the enrolment process (list of students on courses) is essential information to teaching and studying process that is described in figure 4.

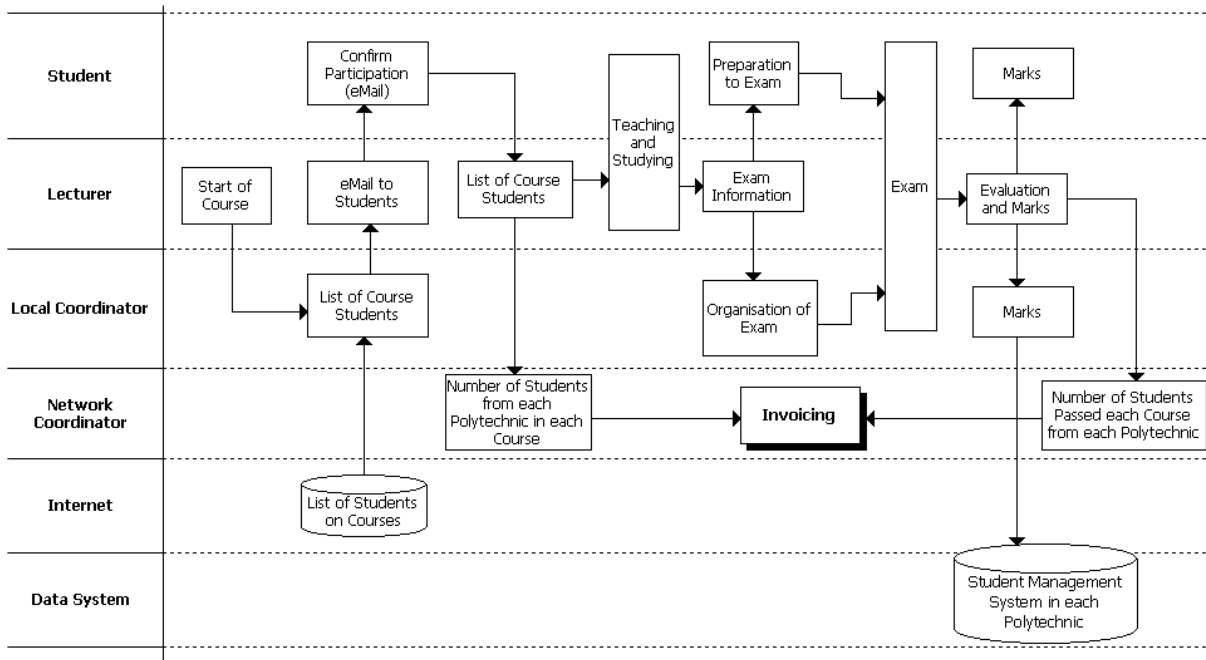


Figure 4. Teaching and studying process

The lecturer of a course asks for the local coordinator to fetch the names and contact information of the students that have enrolled the particular course. The lecturer contacts the students usually by e-mail and informs them about the start of the course. At this point some students may cancel their participation. The lecturer creates the list of students that actually participate the course and sends the list to the network coordinator because it is an input for an invoicing process.

Tietie cooperation does not give any instructions to a lecturer how to arrange the actual teaching and studying. Of course the lecturers share the good practices between themselves.

If there is an examination at the end of a course the lecturer informs the local coordinators about the date, time and other issues that are needed in an examination. The local coordinator organises the examination for local students. He/she gets the examination from the lecturer usually by e-mail. He/she also sends the students' examination papers to the lecturer who gives the marks. The lecturer informs students about their marks. He/she also sends them to the local coordinators who take care of the marks to be entered to local student management system.

We have to emphasise that the viewpoint of the figure 4 is administrative, not pedagogical. So the outcome of the process is the mark of the course, but the real outcome being the learning of a student.



The fourth process, producing statistics and invoicing, is based on student lists. The network coordinator forms the required statistics and the local coordinators take care of invoicing based on these statistics.

Conclusion

In general, Tietie cooperation has been successful. Many decisions that were made in the very beginning have proved to be good. The independency of the participating polytechnics has been respected all the time. The network has not required the copyrights of the learning materials, and so the lecturers have been motivated to produce learning materials. Internet has developed enormously during the cooperation, providing new technologies to be piloted in real teaching and learning contexts. Also the students and lecturers have good computer skills and interest in these new technologies, as they were the representatives of Degree Programmes of Business Information Systems.

There was a need for cooperation in mid 90's. The polytechnics needed more teaching resources, more IT knowledge, and more studying opportunities for the IT students. Tietie cooperation was a solution to these needs, enriching the selection of elective courses and giving an opportunity to experiment new technologies in teaching and learning.

The participants have trusted each other both in administration and teaching. For this reason administration became light, although the administrative processes are complicated. The focus in Tietie cooperation has from the very beginning been in developing and implementing courses, not in developing administration. The administrative processes were developed during the implementation of the first Tietie courses. The administrative model is distributed and the participants have access to all information in Tietie cooperation. All the participants have also administrative responsibilities.

During the cooperation we have found out that if there is available both e-learning and traditional contact learning course, an average student prefers the traditional course. A student becomes interested in an e-learning course if a corresponding contact course is not available in her/his polytechnic, or the student is not able to participate in a contact course. But according to our experiences, there is also a minor group of students who prefer e-learning courses to contact courses. These students are very self-directed and they want to have a strong control of their life or their life situation pushes them to choose courses that are not dependent on time and place. We assume that the mainstream of education in the future will be contact teaching and learning, but this is enriched by e-learning. A successful implementation of e-learning requires also new kind of administrative processes to be developed, especially if several independent institutions are involved.

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