

Paper 2:

# Implementing Telelearning: Decision Support for Instructors, The TeleTOP project

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## Summary:

- One of the telelearning initiatives at the University of Twente in the Netherlands is the TeleTOP project at the Faculty of Educational Science and Technology. The overall goal of the project is to stimulate the innovative and appropriate use of telematics for learning purposes within the faculty in order to make the educational delivery more efficient, more enriched, and more flexible. In practice over 30 existing courses will be modified towards WWW-based courses. A decision support tool is developed and used during individual meetings between instructors and the technical team, thereby involving the staff of the faculty. The decision

support tool makes it easier for instructors to make decisions with regard to the components that they need in their WWW-based learning environment. In practice, the instructors and the team use the decision support tool and decide what can and will be adapted in the existing courses. The next step is prototyping a first concept of the adapted course. This adapted course will show the possibilities of a WWW-based course and is presented to the instructors. The second prototype will comprise actual course materials and is subject to discussion. This process will go on until the final version of the new adapted course is finished.

# Strand 2: Innovative Delivery: Methods and Approaches

## Introduction to TeleTOP

- Flexible and enriched education, attracting more and diverse groups of students, using telematics in education, offering high-quality education, keeping contact between instructor and student; these are all major topics in Higher Education today. Universities see the need to adapt their education in order to attract more students and to be in a good position in the educational market. Using telematics seems the major means to facilitate the needed change in education.

The University of Twente in the Netherlands is known for its strong telematics profile and its capacity to offer an extensive telematics-enhanced educational program. Research and practical experience with regard to telelearning is one of the expertises of the university. At the Faculty of Educational Science and Technology (called, in Dutch, by the letters TO) the TeleTOP project is currently showing this expertise by adapting the faculty's courses to a more telematics-enhanced curriculum. TeleTOP, TeleLearning at TO Project, has as overall goal to systematically support the professional development of the faculty in terms of potential telematics-applications in their teaching, and to carry out the re-design of approximately 30 courses so that education becomes more efficient, more enriched, and more flexible.

## TeleTOP and staff involvement

- Adapting the curriculum at the Faculty of Educational Science and Technology is not just an imposed management change; all instructors are involved in the process. This started with information and hands-on sessions. During the information sessions the instructors were informed about the goals of the project and about the need for an adaptation of the curriculum. The idea of pedagogical re-engineering (Collis, 1997, Collis & Fisser, 1998), where each course is examined in terms of opportunities to provide more flexibility while retaining its strengths, was discussed. The hands-on sessions were meant for instructors who wanted to become familiar with aspects of using a WWW

environment to support new didactics of instruction by actually using such an environment in practice.

During the information and hands-on sessions it became clear that the staff were very interested in changing their course(s). Instead of the intended 15 first-year courses there are now approximately 30 courses from different study years under adaptation and their number will probably grow even more. Next to the regular study program courses, the courses from the faculty's MSc Programme 'Educational and Training Systems Design' are also under adaptation according to the TeleTOP method. This means a big success for the telelearning pioneers of the faculty.

Although the TeleTOP team consists of professional members, (including a chair who is the Professor of telelearning in the faculty, the director of the faculty's computer laboratory, five educational technologists, a webmaster and a database specialist) adapting 30 courses means much work for the TeleTOP-team at supporting the instructors. The instructors need to know what is possible in a WWW-based environment (with respect to communication, course material deliverance, student progress administration, etc.) and they need to know what tools will enable the flexibility options for his course. Most instructors probably cannot make decisions of this order without professional assistance. Therefore the TeleTOP-team has to assist the instructors and show them good examples of what is possible in a WWW-based environment in order to make good decisions. This is done during individual instructor meetings where a Decision Support Tool is used.

## Making aspects of a course more flexible

- As briefly mentioned above, the idea of pedagogical re-engineering is used during the adaptation of the courses. Each course is examined in terms of opportunities to provide more flexibility within the course while retaining its strengths. An important aspect with pedagogical re-engineering is maintaining the 'old value' of good teaching. The instructor

# Strand 2: Innovative Delivery: Methods and Approaches

will not be replaced by telematics applications, but telematics can be used to support the good teaching.

Which parts of a course can be supported by telematics? We divide a course in 6 different components: a) general course organisation, b) communication, c) lectures/instructor presentations, d) self-study and practice, e) collaborative projects and f) testing. With the help of the Decision Support Tool the current practice and strengths of the different course aspects are examined and aspects that can be made more flexible and extended by telematics are identified.

## The Decision Support Tool

- The primary goal of the session in which the Decision Support Tool (DST) is used is to interact intensively with the instructor whose course is being re-designed, trying to identify which ideas and approaches are most likely to be acceptable and interesting to the particular course of the instructor and his/her way of teaching. The second goal of the DST session is to respond with ideas and suggestions, as well as to skip suggestions which do not seem like they will be comfortable for the instructor. The tool makes it easier for instructors to make decisions with regard to making (some of) the course components more flexible in the new WWW-based learning environment. The instructor needs to decide what he thinks is appropriate for his course. But at the same time, the instructional designer of the TeleTOP team responsible for designing and building the WWW-based environment needs to be well informed about the instructor's wishes and decisions.

Therefore, an appointment for one hour was made with all instructors participating in the TeleTOP project. Two TeleTOP team members took part in the interview with the instructor physically present. Because the DST is available on the Internet (password protected), a computer with an Internet connection is used during the interview. First the team members explain to the instructor what the goal of the session will be. Secondly the DST is introduced. The DST tool is designed as a tool for support of a structured interview and will able the

instructor as well as the team members to make decisions in a structured and organised way. The six different aspects of telematics course support can be seen as the components of a course. The components can be subdivided in smaller and more specific tools and functionalities.

Taking the first component of a course, 'Course overview', the instructor will be asked for instance if he prefers a roster in his Web-based supporting course environment. Some of the instructors do not have a clear picture of what has been asked and they might want to see the example which the DST will provide. After the example the instructor has a clearer picture of what is meant by a roster and the functionalities. This will enable the instructor to make a more considered answer to the question. Figure 1 shows a part of the DST with an example window.

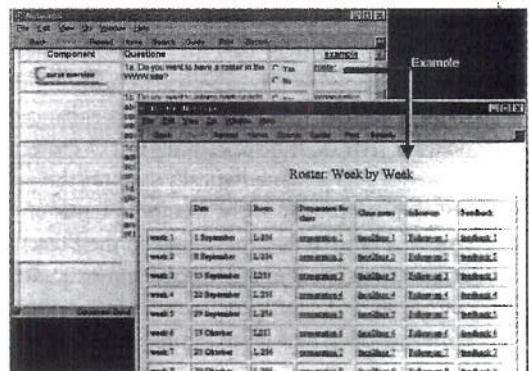


Figure 1. The Decision Support Tool with an "example" window.

In a similar way all six course components are discussed by the instructor and the team members. The questions of the DST are discussed and examples are used as a clarification and a better understanding of what is meant by the questions. After answering all questions of the DST and discussing the components and examples, the DST automatically generates a "decisions made" form. This form is available in the DST environment and is printed out for the instructor. Figure 2 shows the homepage of the DST where all instructors can find their courses and the answers to the questions with regards to the choices made. The instructor is able to compare the choices he has made with the choices of his colleagues. By comparing his course and the chosen options of the other courses, the

# Strand 2: Innovative Delivery: Methods and Approaches

instructor can get more ideas for his own course and he has the possibility to reconsider his own choices. The option of changing the decisions is always there, so that instructors do not need to feel compelled once they have worked with the DST.

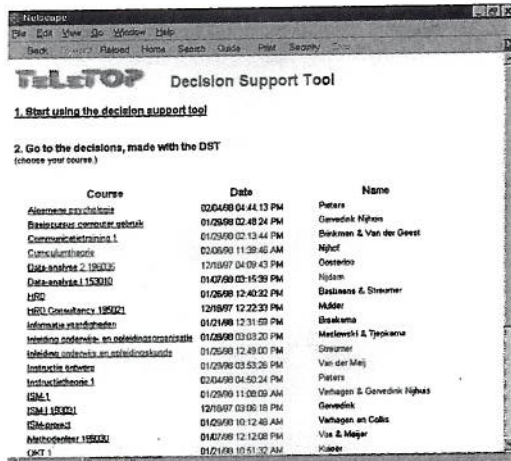


Figure 2. The Decision Support Tool home page where the instructors can find the “decisions made” output.

The “decisions made” form, which is unique for every individual instructor, will be the base for the next step. Within a few days after the DST session, the TeleTOP team will make a first prototype of the course, based on the decisions made. After the development of this prototype two members of the TeleTOP team visit the instructor in his office, and conduct a walk-through of the first prototype of the course WWW site, further discussing the ideas and reactions of the instructor. An example of a first prototype is shown in Figure 3. In this case it is a part of the course ‘Virtual Reality’ with the course component ‘Course overview’ with the functionality ‘newsflash’.

Working with a decision support tool is a convenient way for the instructor to think about the possibilities which correlate with changing his or her course and supporting it via the Web. By structuring the questions all aspects of a course will be treated and this will help both instructors and the team which is responsible for the technical realisation of the environment to continue with the next prototype of the course.

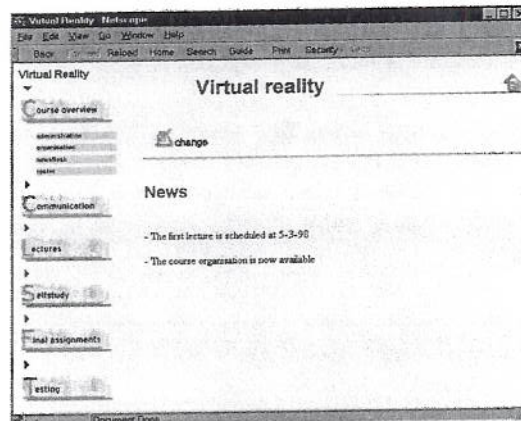


Figure 3. An example of a first prototype of a course, based on the decisions made with the DST.

## Conclusions

- A Decision Support Tool is a good way to involve instructors in extending the courses of the faculty by adding telematics applications. Reaching more flexibility, efficiency and enrichment in a course are the main goals for using telematics as support for the teacher. Replacing the instructor is not, and will not be, the future. Keeping contact between the instructor and the student and stimulating contact among students is important in the learning process. Giving the possibility to students to discuss the learning material with each other and with experts is of utmost importance for the student to become a professional. The instructor with his expertise has to decide which aspects of the course can and should be supported with telematics. After all, the instructor is the one who coaches the learning process.

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## References

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