e-Learning in Pharmaceutical Education at Uppsala University; What's in it for the Student and the Teacher?

Peter Bergsten, professor

Project leader MedfarmDoIT

Medical and pharmaceutical faculties

Uppsala university

Uppsala

Sweden

Background

- **Reformation** work of **undergraduate education** at pharmaceutical and medical faculties (1999-).

- **Competitiveness** of the undergraduate education delivered at Uppsala University in relation to other national and international universities.

- **Recruitment** of highly motivated students to be trained for careers in the private and public sectors including industry, health-care and research in academic and other environments.

- **Highest standard** of pharmaceutical and medical undergraduate education at Uppsala University.

- Today's students: computer, Internet, cell phones, mp3-players etc used for diverse ways of obtaining information and communicating, "**digital natives**" (Marc Prensky)

- The **Internet** offers up-to-date, accessible **information** that can be used **in education**.

Learning strategies **discussed** among teachers at the faculties (1999-2000).

Pedagogic orientation **decided** (2001):

- **Student centered**
  - Student teacher interaction by diverse means (reduce traditional lectures)

- **Student activated**
  - Information seeking
  - Case-oriented (when appropriate)

New **curricula** at the pharmaceutical and medical faculties with integrated, **Internet-based learning modules**.

"Teachers are to be stimulated in their attempts and efforts to develop and further the usage of internet-based solutions in undergraduate education" (Uppsala University Medical and Pharmaceutical Faculty Board, 2002)

Level of **usage of Internet-based** solutions in undergraduate education highly **variable** among teachers at the faculties.

Enhanced usage by dynamic and organic growth. Not a must, rather an **opportunity**.

Start with teachers already using or positive to the usage of Internet-based solutions. "The power of the **positive example**" (Anders Hallberg, chancellor of Uppsala University, former dean of the Pharmaceutical Faculty and chair of the MedfarmDoIT Steering Committee)

Establishing the **MedfarmDoIT** team.

Project period: 5 years (2002-2006)

Economy: pharmaceutical and medical faculty level, no direct cost for participating teacher, departments

The MedfarmDoIT team:

- Project leader: teacher from pharmaceutical or medical faculty, 50%

- Pedagogic expertise: four teachers from pharmaceutical and medical faculties, 15% each

- Technical expertise: three programming and multimedia persons, 100% each

Methods: 2002-2003 (early phase)

Interaction between pedagogics and technology

Pedagogics:

- Information
    - Presenting ways of new learning strategies (opportunities rather than compulsory)
    - Workshops
    - Attending departmental and faculty pedagogic meetings
    - Targeting special courses and teachers
    - Homepage
- Productions:
    - "Free of charge"
    - "Contract": joint ownership of modules between MedfarmDoIT, Uppsala University and teacher
    - Accessibility: open globally or password protected

Technology:

- Home-page
- Program- and course web-page
- 2-D animations
- Quizzes
- Lecture recordings

Pedagogics:

- e-Based learning, new pedagogic strategy
- e-Based evaluation, course evaluation
- Student-teacher platform for communication: "Kurswebben", Ping-Pong, Marratech
- Student Helpdesk: "Students help students"

Technology:

- Home-page (http://doit.medfarm.uu.se)
- Library for productions "Mediabiblioteket"
- Program- and course web-page "Kurswebben"
- Quizzes
- Course evaluation "OLQ Lite"
- Lecture recordings
- Studio recordings

Productions:

- 30 in "Mediabiblioteket" (Dec 2003)

Methods: 2004-2006

Interaction between pedagogics and technology

Pedagogics:

- Teacher interaction, channeling ideas with potential as Internet-based modules
- Case-oriented learning
- Internet-basing of whole undergraduate programs
- Usage of modules in "Mediabiblioteket" to enhance education
- National and international contacts
- Production and utilization by different programs (project evaluation and budget modeling)

Technology:

- Enhanced course evaluation system
- Data-base for case-oriented learning
- Green-screen
- 3-D animations
- Project evaluation
    - Student and teacher questionnaires
    - Monitoring module access
    - Data base for project time management

Results: 2004-2006

Pedagogics:
- Internet-based case-oriented learning
- Implementation of internet-based education (nursing and laboratory technician programs) with on- and off-campus students
- Collaborations with Karolinska, Stockholm, Umeå University and Stanford University

Technology:
- Enhanced course-evaluation system "Kurt"
- Data-base for case-oriented learning "Frida"
- Lecture recordings
- Studio recordings
  - Green screen

Productions:
- 350 in "Mediabiblioteket" (Dec 2006)
- Accesses increase (server access statistics)

MedfarmDoIT **permanent** part of the pharmaceutical and medical faculties (2006).

Methods: 2007-

Interaction between pedagogics and technology

Pedagogics:

- Teacher interaction, channeling ideas with potential as Internet-based modules
- National and international contacts in automated recording and distribution (collaboration with Apple Computer)
- Copy protection of modules

Technology:

- Automated recording
- Distribution formats (podcasting)
- Protection against illegal distribution
- Establishing the user zone www.uu.se
- Monitor production access by statistical software

Pedagogics:

- Selecting courses and teachers within the pharmaceutical and medical faculties to perform automated recorded lectures and distribution
- Enrollment of the last programs into the course evaluating system
- Seminars on copy protection of modules

Technology:

- System for automated recording
- System for automated distribution formats
- Establishing the user zone www.uu.se

Productions:

- 386 in "Mediabiblioteket" (Sep 2007)
- Accesses increase, more from non Uppsala University users

Future perspectives

e-Learning at Uppsala University and MedfarmDoIT in a national and international perpective
- External contacts and collaboration
- New production formats and angles

Product usage and dissemination
- Copyright
    - External contacts, publishing companies, universities etc
    - Commercial aspects
- Copy protection

Project quality control
- Documentation
- Evaluation

Establishment of unit for e-learning pedagogics including production and maintenance of e-learning tools, MedfarmDoIT

- Combination of pedagogic and technical skills (continuity but also rotation among members to ensure pedagogic and technical edge)

- Close contact with other teachers and students (evaluation)

- Central budget (economy not argument for refraining from implementing Internet-based learning modules)