Education and Knowledge Space: Virtual University
- Concept and Strategic Framework of the FernUniversität in Hagen

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Starting Point

- Education will become a permanent process in everybody's life
- Study programmes are not longer complete and sufficient for one's whole life

Conclusions

- The time restricted learning period of these days will be enlarged to lifelong learning
- The increasing coincidence of business and education means new requirements
- Traditional concepts can naturally not fulfill these demands
Challenges and Prospectives

The use of information and communication technologies and new media will

• become a strategically important fact in the further development of universities

• become a core topic for the presidents office and the university boards

• require an overall university media concept

• change working process flows, structures and cooperation

• give the opportunity to improve performance and quality in research, education and administration
Main Question

• It is not so much the „Virtual University“ as it is the „University of the Future“

but

• one has to ask, how will the individual university, by using the modern I&C-Technologies and New Media, find its way to become its university of the future
The answer will induce

- the degree of virtuality
- the development and use of virtual university structures
- the role of New Media and I&C-Technologies as
  - tool and strategy
  or
  - motor and final objective
Responsibilities of the Presidents Office

- to develop and to strengthen a common vision
- to define common corner stones
- to establish advisory boards and developing teams
- to install internal incentive systems
- to find money for innovations
Responsibilities of the Presidents Office

• to develop and to strengthen a common vision
FernUniversität in Hagen

- founded in December 1974 by the Parliament of North Rhine-Westphalia
- the only distance teaching university in Germany
- profile of its students
  - 29-35 average age
  - 80% in employment
  - 40% post graduate students

- 60% part time students
- 15% full time students
- 15% guest students
- 10% students from other universities
Mission Statement of the FernUniversität as its Answer to the Question about its University of the Future

• Profile ? Preamble of the Mission Statement

The FernUniversität at Hagen/Germany is a university of the state of North Rhine-Westphalia. It is committed to the academic tradition of unity of research and teaching. As the first and only distance teaching university in the German-speaking countries and regions it offers degree programmes at the undergraduate and graduate levels as well as research-oriented academic further education at a qualitatively high level through the systematic use of traditional and new media.

With its tradition of supported distance higher education, the FernUniversität allows students in special social situations to combine their studies with a career or bringing up a family irrespective of time and place or also as a conscious alternative to attendance-based studies.

The FernUniversität is committed in a special way to creating equal opportunities. With its differentiated range of training and further education course it, at the same time, takes into account the requirements of lifelong learning.
Mission Statement: Developing Concept and Planning of the Future

- The use of media — motor for the university of the future
- Research — base for science and education
- Teaching — attraction by innovations
- Academic further education — fast response to education requirements
- Internationalisation — advantage of its specific study system
- Cooperations — open for synergies
The exceptional feature of the teaching system at the FernUniversität lies in the blanket use of media in teaching. It occupies a leading role in the use of electronic media amongst national and international competition.

With its concept of the “Education and Knowledge Space: Virtual University” it makes available all the functions of a university via electronic communication networks based on an integral approach. Thus, it creates new perspectives with regard to quality of teaching, individualisation, need orientation, social networking and European integration in education.
Responsibilities of the Presidents Office

• to develop and to strengthen a common vision
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Pre-Conditions

The development and use of virtual university structures makes sense, if for the individual university

• this leads to a considerable improvement of quality in comparison to traditional teaching and learning procedures
• this means an integral approach
• new and further target groups can be attracted
• this meets the needs and requirements of the students
• this strengthens the competitive position of the own university in the national and international education market
For the FernUniversität the Virtual University is its University of the Future – Arguments:

From the students point of view
• interaction, simulation, animation in the cognitive part of the studies from decentralized locations
• access to decentralized information resources
• more improved communication facilities between students – lecturers/tutors
  students – students
from all locations

From the point of view of FernUniversität
• consistent further development of the traditional distance teaching system
• the consequence from its profiling and positioning in the German university landscape (s.a. mission statement)
• challenge and prospective
Concept

Education and Knowledge Space: Virtual University (LVU)

- Study programmes
- Tutoring and mentoring
- Intensive communication and social contracts
- Computer supported cooperative learning (CSCL) via the net
- Features for exercises and practical courses
- Access to libraries and decentralized information resources via the net
- Access to research as interface to teaching
- Access to information and advisory offers
- Administration (students office, faculty offices, etc.)
Role Concept for the Operation of the Technical Platform

Students

LVU Team for the Regular Operation of the Technical Platform (Computer Centre)

Faculty Administrator

Course Counsellors

Faculty of Cultural and Social Science

Faculty Administrator

Course Counsellors

Electr. Engineering

Faculty Administrator

Course Counsellors

Computer Sc.

Faculty Administrator

Course Counsellors

Mathematics

Faculty Administrator

Course Counsellors

Faculty of Law

Faculty Administrator

Course Counsellors

Faculty of Economics
Virtual University of the FernUniversität (LVU)

In its university of the future the students will use their PC as:
- learning place
- information agent
- communication centre

They learn
- where and when they choose
- also in combination with traditional teaching methods
- now as before also in personal contact
Responsibilities of the Presidents Office

- to develop and to strengthen a common vision
- to define common corner stones
- to establish advisory boards and developing teams
Advisory and Development Teams in the Decision Making Process

Traditional University Structure

- Faculties
- University Computer Centre
- Centre for the Development of Distance Teaching
- University Library
- Administration
- Students

Rectorate

Proposal for Decision - Making

Additional LVU-Development Teams

- Prorector, Media Coordinator
- LVU-Office
- User Group
- Expert Group
- VU Development Unit (in the Univ. Computer Centre)
- Design Group
- Organization Group

Decision

Communication

Consultative Decision - Making
Migration Strategy:
Advisory and Development Teams

Faculties

Administra
tion

Group of
Experts

Research
Projects

Design
Group

advise rectorate
and user group

chairs

Supports

Rectorate

decides

User
Group

develops user demands and compiles project proposals

Organization
Group

LVU-Office

Prorector, Media Coordinator

URZ

Technical
Operation

LVU-
Development
(Tools, Structures, System)

ZFE

URZ

User

Group

Content

URZ

Research
Projects

University
Library
Responsibilities of the Presidents Office

- to develop and to strengthen a common vision
- to define common corner stones
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- to install internal incentive systems
- to find money for innovations
Financing

- Enlargement and further development by university owned money and resources
- Third party funding

Content Developing

- own money, Media Centre
- material fees
- third party funding (local)
- third party funding (national) (Federal Minister of Science)

Development of the Technical Infrastructure

- own money, Computer Centre
- third party funding (Minister of Science NRW)
- third party funding (national, LVU)
Requirements for Funding

- Integration in the faculty concepts, in the overall concept of the university and into the technical platform / infrastructure
- Willingness and activities to a sharing of experience
- Exploitation and cash flow: reinvesting in the development

Internal Project Funding for LVU

2000 – 2003

- 2000: Funding/Supporting of 14 Projects: 950,000 DM
- 2001: Funding/Supporting of 28 Projects: 2,547,000 DM
- 2002: Funding/Supporting of 29 Projects: 1,120,000 €
- 2003: Funding/Supporting of 21 Projects: 800,000 €
## Projects involved in the National Program “New Media in Education”

<table>
<thead>
<tr>
<th>Title</th>
<th>Faculty</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILSO – Integrated Teaching in Social Sciences</td>
<td>Cultural and Social Sciences</td>
<td></td>
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<tr>
<td>Math-kit – Multimedial Tool Box for Education in Basic Mathematics</td>
<td>Mathematics</td>
<td></td>
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<tr>
<td>LEARNET – Learning and Making Experiments with Real Technical Systems via the Net</td>
<td>Electrical Engineering</td>
<td></td>
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<tr>
<td>VINGS – Virtual International Gender Studies</td>
<td>Cultural and Social Sciences</td>
<td></td>
</tr>
<tr>
<td>ULI- University Cooperation in Computer Science</td>
<td>Computer Science</td>
<td></td>
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<tr>
<td>Multimedia Distance Study Program: Medical Computer Science</td>
<td>Computer Science</td>
<td></td>
</tr>
<tr>
<td>MMISS MultiMedial Interaction in IT-Security</td>
<td>Computer Science</td>
<td></td>
</tr>
<tr>
<td>IngMedia – Interactive Learning Software for Technical and Physical Experiments in Engineering Sciences</td>
<td>Computer Science</td>
<td></td>
</tr>
<tr>
<td>Neue Statistik – Learning Software for Basics in Statistics</td>
<td>Economics</td>
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**Sum. ca. 5 Mio €**
Virtual University – State of the Art

From the R&D-Projects result:

● 4 study programs Bachelor of Science as online study programs:
  ➤ „Computer Science“ in the Faculty of Computer Science (since WS 1999/2000)
  ➤ „Information and Communication Technology“ in the Faculty of Electrical Engineering (since WS 2000/2001)
  ➤ „Mathematics“ in the Faculty of Mathematics (since WS 2000/2001)
  ➤ „Mathematical Methods“ in the Faculty of Mathematics (since WS 2001/2002)

● Technical Platform
  ➤ research prototypes „Virtual University“ available via CampusSource (www.campussource.de)
  ➤ Version 2000 in operation
  ➤ Version 2003 at the end of 2003 (under development)
Virtual University – State of the Art

- Multimedia study materials in the faculties:
  - Content: up to now 215 lectures, ca. 620 h/term
    (Use of CBTs, CD-ROMs, Audio-/Video Cassettes, Online courses)

- Development of special teaching methods:
  - Online exercises and practical courses:
    - 2600 students per term in online-exercises for 15 lectures (ca. 125,000 assignments/term)
    - more than 10 online practical courses per term in Electrical Engineering and Computer Science

- Internet based seminars (20 seminars per term in Electrical Engineering, Culture and Social Sciences, and Computer Science)

- Computer supported cooperation learning via the net

- Video conferencing for examinations and preparation of exams (ca. 100 conferences per year)
Examples
Course Portal

the concept of integrated learning environments
Course Portal

- the concept of integrated learning environments

Institut für Erziehungswissenschaft und Bildungsforschung

Berufs- und Wirtschaftspädagogik

Theorie der Schule und des Unterrichts

Relevante Websites

Arbeitsamt

Ausbildungsberufe der Informationstechnologie
Virtual Seminars: planning, structuring, and visualization
WebAssign: Correction Modes

- manual
- automatic pre-testing & manual correction
- automatic
Real Systems in the Virtual Lab
Real Systems in the Virtual Lab
- Data Interpretation
Real Systems in the Virtual Lab
- Enlargement: Virtual Reality
Library

Digitale Bibliothek NRW
Die Digitale Bibliothek NRW ist ein Projekt der Hochschulbibliotheken in Nordrhein-Westfalen. Sie erweitert die physische Bibliothek um elektronische Medien.

Feedback
Wir freuen uns, wenn Sie uns Ihre Meinungen mitteilen. Bitte um einen Moment Zeit, um uns Ihre Anmerkung zu geben.

Suchen
Durchsuchen Sie unseres Stellenangebots. Es wird nur auf den WWW-Sites der Uni gesucht; nicht in Katalogen und Onlinespeichern.

Fachinformationen
Allgemeines, Elektrotechnik, Geschichte, Informatik, Bibliotheksmanagement, Mathematik, Philosophie, Politik, Psychologie, Rechtswissenschaft.

Kontakt

Informationen für Studieninteressenten - Netscape

Universitätsbibliothek

Aktuell
Mitschriften der LB, Angebote, Archiv,Planung

Europäische EDZ
Das Europäische Dokumentationszentrum, Bibliographie, Bibliografie, Datenbanken, etc.

Services
ABCD, Daten, INBIB, Studienzweigen, Kongressen, Informationseinschließlich, Angebotsaktivitäten

Volltexte

OPAC
Makroforschung, BDB, Ausleihen, Katalogisierung, Systematik, Stichwörter, Briefe, Beschlüsse zur Benutzung.

Kontakt
FernUni News: „Deutsches Gedächtnis“

Virtual Graduate School
Prospect

Future activities will be focussed on

• standard operation
• quality management
• networking of all university staff
• building up new working flow processes (e-government)
Virtual University – University of the Future?

Universities of the future are the response to

- the diversity of the student body and their need orientation
- the profiling and positioning process of each individual university

They are not the answer to

- the technical and methodical facilities
Virtual University – University of the Future?

• virtual university in its “pure” mode is one type of the university of the future

but

• virtual university structures will become an integral part in each university of the future, where the degree of virtualization depends on the profile and the need-orientation of the individual university
FernUniversität in Hagen

http://www.fernuni-hagen.de