The Development of Online Distance Learning - Challenges and Opportunities for HE

DAAD DIES-Conference, 29. November 2011

Olaf Zawacki-Richter, Ph.D.
Professor of Educational Technology

Overview

- What is online distance education (ODE)?
- A brief history of ODE
- Opportunities for higher education
- Challenges and barriers to ODE
Distance Education

Simonson, Schlosser & Orellana (2011, p. 126):
“Distance Education is institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors” (p. 126).

- carried out through institutions, formal education
- geographic separation of teachers and learners
- interactive telecommunications / media
- learning group, learning community, learning material

Innovations in Educational Technology

Correspondence Generation 1850-
 Telecom. Generation 1960-
 Computer Generation 1970-

Attributes of Distance Education
- access
- flexibility
- costs

Impact of Media on the Delivery of DE: The "Golden Triangle"

Flexibility +
Access +/-
Costs -

Media
(synchronous/ asynchronous)
- 1856 Langenscheidt-Toussaint
- 1858 University of London
- 1875 UNISA
- flexibility: very high
- interaction: very slow

- Foundation of "Open Universities" to increase access to higher education ("mass higher education")
- 1969 OUUK
- 1974 FernUniversität in Hagen
- Network of study centres
- academic support through telephone, fax, video, tv broadcasts, video conferencing ("multimedia generation")
- Murray Turoff (New Jersey Institute of Technology) developed computer-conferencing (computer-mediated communication)
- CoSy (conferencing system) used for online tutorials in 1988 at the OUUK (Mason, 1989)
- asynchronous cmc affords inter-personal discussion independent from time and space

Virtual-U developed 1994 to 1995 at Simon Fraser University in Canada

University of Maryland University College

Development of online distance learning: UMUC

- University of Maryland University College, Adelphi, Maryland (USA)
- Four out of five undergraduate students enrolled in UMUC’s programs are also working full time.
- In fall 2006, the median age for students enrolled in UMUC’s undergraduate programs was 32 years old.
- However, in contrast to traditional distance education, the number of younger first time students is growing.

"Our student body is quite diverse. In age the biggest segment is from 25 to 44; but increasingly the age group under 25 is growing. These are usually traditional students who go to residential campuses. However, in the United States, those campuses are becoming more and more expensive, and many students have to work and go to school part-time. So increasingly they come to us."

(Nick Allen, President UMUC, 2004, EDEN Conference)
Student numbers and web enrollments (UMUC, 2010)

### Tab. 1: Entwicklung der Studierendenzahlen seit 1914 nach Studienform

<table>
<thead>
<tr>
<th>Jahre</th>
<th>Gesamt</th>
<th>Präsenzstudium</th>
<th>Fernstudium</th>
<th>Abendstudium</th>
<th>Externat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>86,5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1917</td>
<td>149,0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1927</td>
<td>114,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1940/41</td>
<td>478,1</td>
<td>335,1</td>
<td>128,0</td>
<td>15,0</td>
<td>-</td>
</tr>
<tr>
<td>1950/51</td>
<td>796,7</td>
<td>502,6</td>
<td>277,1</td>
<td>17,0</td>
<td>-</td>
</tr>
<tr>
<td>1960/61</td>
<td>1.496,7</td>
<td>699,2</td>
<td>629,9</td>
<td>167,6</td>
<td>-</td>
</tr>
<tr>
<td>1970/71</td>
<td>2.671,7</td>
<td>1.296,5</td>
<td>985,4</td>
<td>389,8</td>
<td>-</td>
</tr>
<tr>
<td>1980/81</td>
<td>3.045,7</td>
<td>1.685,6</td>
<td>959,1</td>
<td>401,0</td>
<td>-</td>
</tr>
<tr>
<td>1990/91</td>
<td>2.824,5</td>
<td>1.647,7</td>
<td>892,3</td>
<td>284,5</td>
<td>-</td>
</tr>
<tr>
<td>1995/96</td>
<td>2.790,7</td>
<td>1.722,6</td>
<td>855,8</td>
<td>174,8</td>
<td>7,5</td>
</tr>
<tr>
<td>2000/01</td>
<td>4.741,4</td>
<td>2.625,2</td>
<td>1.761,8</td>
<td>302,2</td>
<td>52,2</td>
</tr>
<tr>
<td>2002/03</td>
<td>5.947,5</td>
<td>3.104,0</td>
<td>2.399,9</td>
<td>346,0</td>
<td>97,6</td>
</tr>
<tr>
<td>2003/04</td>
<td>6.455,7</td>
<td>3.276,6</td>
<td>2.703,7</td>
<td>351,3</td>
<td>124,1</td>
</tr>
<tr>
<td>2004/05</td>
<td>6.884,2</td>
<td>3.433,5</td>
<td>2.942,5</td>
<td>361,8</td>
<td>146,4</td>
</tr>
<tr>
<td>2005/06</td>
<td>7.064,6</td>
<td>3.508,0</td>
<td>3.032,0</td>
<td>371,2</td>
<td>153,4</td>
</tr>
<tr>
<td>2006/07</td>
<td>7.309,8</td>
<td>3.582,1</td>
<td>3.195,9</td>
<td>372,3</td>
<td>159,6</td>
</tr>
<tr>
<td>2007/08</td>
<td>7.461,3</td>
<td>3.571,3</td>
<td>3.367,9</td>
<td>352,9</td>
<td>169,2</td>
</tr>
<tr>
<td>2008/09</td>
<td>7.513,1</td>
<td>3.457,2</td>
<td>3.546,7</td>
<td>343,7</td>
<td>171,5</td>
</tr>
</tbody>
</table>

**Quelle:** Федеральное агентство по статистике (Föderales Amt für Statistik), http://www.gks.ru/free_doc/new_site/population/obzr/obzr1.htm (Zugriff am 03.01.2011)

---

### Entwicklung der Studierenden in den Wintersemestern

**WS 1975/76 - WS 2010/11**

![Graph](image)
Widening participation with ODL

- Growing demand for flexible learning opportunities in the era of lifelong learning.
- Access to mass higher education
- Non-traditional students: working professionals, students with disabilities, or students with social/family obligations.
- Internationalization via modern ICTs
- Globalization of the education market:

Lucy was a student from Latin America, working in New Zealand and completing part-time an Australian degree which was being offered via Singapore [...] We asked her what she wanted to do when she finished her qualification. She said her aim was to gain a position in the United States office of the European company she worked for. (McBumie & Ziguras, 2007, p. 6).

Barriers to Distance Education

- Large-scale study
- Factor-analytic study to identify dimensions of barriers to distance education
- 64 items (barriers) derived from literature, previous research and selected case studies
- Rated on a 1-5 scale (no barrier to very strong barrier)

Sample

- N=2,504 valid surveys (collected in the US)
  - 1,276 from HE institutions
  - 448 from corporate sector
  - 375 from community colleges
  - 129 from government organizations
  - 126 from middle or secondary schools
  - 117 from non-profit organizations
  - 33 from elementary schools

- Job functions:
  - 1,150 teachers, faculty or trainers
  - 648 managers, directors
  - 346 support staff
  - 167 higher administrators (e.g. dean, vice-president)
  - 193 other


Analysis

- Exploratory factor analysis of the 64 items (barriers) revealed 10 factors that accounted for 52% of the overall variance.
- 14 variables that were not included in any factor, e.g.:
  - competition with on-campus courses, or for existing students
  - isolation felt by instructors
  - problems with vast distances or time zones
  - lack of professional prestige for distance learning
  - accreditation issues
  - language barriers across cultures
### Table 1. Factor Analysis of Barriers to Distance Education

<table>
<thead>
<tr>
<th>Barrier</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of partnerships/consortia agreements</td>
<td>.516</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time equivalent issues</td>
<td>.510</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology fee</td>
<td>.494</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition rate</td>
<td>.491</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of transferability of credits</td>
<td>.464</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of ongoing credibility of program</td>
<td>.445</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local, state, or federal regulations</td>
<td>.440</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue sharing with departments or business units</td>
<td>.425</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty competing with new distance learning (DL) business models</td>
<td>.396</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of money to implement DL programs</td>
<td>.340</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional academic calendar/bedside hinders DL</td>
<td>.304</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table continued on the following page

#### Administrative structure
- Organisational change
- Technical expertise, support & infrastructure
- Social interaction & program quality
- Faculty compensation & time
### Education Innovation: Organizational Change

- **Meso-level of educational management**
- **Support from top management**

"[...] unless a college or university is prepared to make a serious long-term, institution-wide commitment to the goal, it is extremely difficult to go virtual in a big way."

Nicholas H. Allen (2001: 72)
Provost / Chief Academic Officer
University of Maryland University College (UMUC)

- **Faculty participation – incentives for innovative teaching**
- **Faculty support**

"Presidents may dream visions, and vice presidents may design plans, and deans and department heads may try to implement them, but without the support of faculty members nothing will change."

Distance Education & Technology Continuing Studies (Director)
University of British Columbia

---

<table>
<thead>
<tr>
<th>Barrier</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased time commitment (course development, training, etc.)</td>
<td>-588</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-420</td>
</tr>
<tr>
<td>Lack of grants for DL</td>
<td>-785</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception that computers may replace teachers</td>
<td>-729</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty feel job security is threatened</td>
<td>-480</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of technology</td>
<td>-464</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat to instruction/ sense of competence/ authority</td>
<td>-766</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copyright and fair-use issues</td>
<td>-740</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of policy concerning intellectual property rights</td>
<td>-466</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of security</td>
<td>-390</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal issues (computer crime, hackers, piracy, viruses)</td>
<td>-390</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of research supporting effectiveness</td>
<td>-390</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of library access or materials delivery</td>
<td>-493</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of student services (advising, financial aid)</td>
<td>-650</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of student services (advising, financial aid)</td>
<td>-527</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inability to monitor identity of DL students</td>
<td>-390</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty recruiting faculty or students</td>
<td>-310</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prof. Dr. habil. Olaf Zawacki-Richter
Organizational Change: Top-Down / Bottom-UP

Technical Infrastructure  
Resources  
Mission and Vision  
Incentives  
Academic Support Units  
Education Innovation  
Faculty Support  
Professional development  
Academic Ownership  
Examples of good Practice  
Demand for flexible learning opportunities  
Professional development  
Project management instructional design

Instructional design

- Instructional design is a systematic approach to the planning, design, implementation and evaluation of educational interventions.
- Team approach vs. lone ranger approach
- ADDIE model:
  - Analyze
  - Design
  - Develop
  - Implement
  - Evaluate
Instructional design process


Thank you for your attention!

Olaf Zawacki-Richter, Ph. D.
Professor of Educational Technology
University of Oldenburg, Germany

olaf.zawacki-richter@fernuni-hagen.de