Learning Technologies in Higher Education:

What universities provide and what learners use

Dr. Maike Reimer, Dr. Susanne Falk, Hanan Asghar

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Research Questions

• Use patterns by degree, discipline and university
• Association between provision and use of technology
• Relationship of internal and external resources
Data

- Survey of graduates from all Bavarian federal universities /universities of applied sciences
- Roughly 1 – 1.5 years after graduation
- All degrees and disciplines
- Population: about 53,000
- Participants: 17,513 (10,230 of universities)
- Response: about 32 %
Survey topics

- Practical experience
- Competencies
- Evaluation of studies
- Use of digital resources
- Study behavior
- Student and Graduate Mobility
- Transition from BA to MA
- Transition into the labour market
- First employment
Information gathered

• Importance of **live lectures**

• Importance of **internal e-learning resources**

• Importance of **external e-learning resources**

• **Kind of e-learning resources offered by own university**

• **Intensity of use of these**
### Importance of E Learning – Internal resources

<table>
<thead>
<tr>
<th>Importance of Live Lectures, seminars etc.</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>„Neither“</td>
<td>„Transformed“</td>
</tr>
<tr>
<td>High</td>
<td>„Traditional“</td>
<td>„Ambidextrous“</td>
</tr>
</tbody>
</table>
Use pattern I by degree

Live lectures vs. internal E-Learning Resources

Bachelor | Master | SE Lehramt | SE Jura
---|---|---|---
Traditional | | | |
Transformed | | | |
Ambidextrous | | | |
Neither | | | |
Use pattern I by discipline

Live lectures vs. internal E-Learning Resources

- Neither
- Transformed
- Ambidextrous
- Traditional
Use pattern I by university

Live lectures vs. internal E-Learning Resources

- **Uni 7**: Neither (50), Transformed (20), Ambidextrous (30)
- **Uni 8**: Traditional (30), Transformed (40), Ambidextrous (30)
- **Uni 2**: Neither (40), Transformed (30), Ambidextrous (30)
- **Uni 5**: Neither (50), Transformed (20), Ambidextrous (30)
- **Uni 10**: Neither (50), Transformed (20), Ambidextrous (30)
- **Uni 9**: Neither (50), Transformed (20), Ambidextrous (30)
- **Uni 3**: Neither (50), Transformed (20), Ambidextrous (30)
- **Uni 6**: Neither (50), Transformed (20), Ambidextrous (30)

Only Economics (Studienfachbereich)
### Importance of E Learning – External resources

<table>
<thead>
<tr>
<th>Importance of E Learning – Internal resources</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>„Abstainers“</td>
<td>External focus“</td>
</tr>
<tr>
<td>High</td>
<td>„Internal focus“</td>
<td>„Both worlds“</td>
</tr>
</tbody>
</table>
Internal vs. external E-Learning Resources

- **Bachelor**: Abstainers (60%), Internal focus (25%), Both worlds (15%)
- **Master**: Abstainers (60%), Internal focus (25%), Both worlds (15%)
- **SE Lehramt**: Abstainers (60%), Internal focus (25%), Both worlds (15%)
- **SE Jura**: Abstainers (60%), Internal focus (25%), Both worlds (15%)
Use pattern II by discipline

Internal vs. external E-Learning Resources

- External focus
- Both worlds
- Internal focus
- Abstainers
Internal vs. external E-Learning Resources

- External focus
- Both worlds
- Internal focus
- Abstainers

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Theories and concepts I
Provision and use

USED - Mean n of resources

OFFERED - Mean n of resources

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Internal and external

External resources - importance

Internal resources - importance

Uni 2  Uni 3  Uni 5  Uni 6  Uni 7  Uni 8  Uni 9  Uni 10

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Where do we go from here?

Goals to pursue with the same data set:

- Multivariate analyses
- Add university level /faculty level data
- Develop / discover conceptual models to address explicitly mechanisms between organization and individuals
- Use/use intensity = advantages?

Goals to pursue with new data:

- Derive hypotheses from these models
- Develop suitable data collection plan
Where do we go from here?

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An activity system for settings involving the use of technology in higher education.
<table>
<thead>
<tr>
<th>Study courses offer various opportunities for direct and virtual learning.</th>
<th>Very important</th>
<th>unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>How important were the following learning contexts for your study experience?</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td><strong>normal courses in classrooms</strong></td>
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</tr>
<tr>
<td><strong>E-Learning-opportunities offered by my university</strong></td>
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<tr>
<td><strong>E-Learning-opportunities offered by my others (i.e. other universities, profit-oriented enterprises...)</strong></td>
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<tr>
<td><strong>direct exchange with peers</strong></td>
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<tr>
<td><strong>virtual exchange with peers (i.e. via E-Mail, Facebook, WhatsApp, Moodle, Internet boards etc.)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Other:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How frequently did you use the following e-learning opportunities offered by your university for your studies?</th>
<th>Very frequently</th>
<th>never</th>
<th>Wasn’t offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>By that we mean materials and contents created by your university and distributed via university websites or external platforms</td>
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<tr>
<td><strong>Written materials for courses (i.e. literature lists, papers, syllabi...)</strong></td>
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<td><strong>Online-Courses</strong></td>
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<td><strong>Learning Modules</strong></td>
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<tr>
<td><strong>videotaped lectures / eLectures</strong></td>
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<td><strong>Podcasts</strong></td>
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<td><strong>Films</strong></td>
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<tr>
<td><strong>Self assessment and testing tools, quizzes....</strong></td>
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<tr>
<td><strong>discussion boards</strong></td>
<td></td>
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<tr>
<td><strong>Other:</strong></td>
<td></td>
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</table>

| Which of the following E-Learning-Opportunities outside your university did you use? | Very frequently | never |
| --- | --- |
| **E-Learning on national oder international platforms (i.e. Coursera, Udacity, Khan Academy, edX, iversity, iTunes U, YouTube, Vimeo, Twitter, Google+, etc.)** | |
| **E-Learning by virtuelle Hochschule Bayern (vhb)** | |
| **Research platforms (z.B. Research Gate)** | |
| **Other:** | |