Aspects of eLearning

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Outline

• Educational Theory
  • Educational Technology
  • Theory & Technology
    • E-Learning Standards
Proposition I

(Inglehart 1997)

The predominant educational assumptions of a society are not invented freely but reflect the predominant cultural values of this society.

Proposition II

(Baumgartner/Payr 1999)

Every piece of Educational Software, Authoring Tool or Learning Management System (LMS) implements a certain kind of learning theory.

Every function of the software has underlying (tacit) pedagogical assumptions.
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**Learning Paradigms**

<table>
<thead>
<tr>
<th>(Neo-) Behaviorism</th>
<th>Cognitivism</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain is a “black box”</td>
<td>Internal Procedures matter</td>
<td>Brain is a self-referential system</td>
</tr>
<tr>
<td>Output - Input</td>
<td>Output - Input</td>
<td>informationally closed</td>
</tr>
<tr>
<td>Variable</td>
<td>modelled Feedback</td>
<td>energetically open</td>
</tr>
<tr>
<td>external Feedback</td>
<td></td>
<td>structural Coupling</td>
</tr>
</tbody>
</table>

**Transfer**
- factual knowledge, “know-that”
- Transfer of propositional knowledge
- to know, to remember
- Production of correct answers
- Verbal knowledge, Memorisation
- to teach, to explain

**Tutor**
- procedural knowledge, "know-how"
- Presentation of predetermined problems
- to do, to practice
- Selection of correct method and its use
- Skill, Ability
- to observe, to help, to demonstrate

**Coach**
- social Practice, "knowing-in-action"
- Action in real (complex and social) situations
- to cope, to master
- Realisation of adequate action strategies
- Social Responsibility
- to cooperate, to support

**Teaching I**
**Teaching II**
**Teaching III**

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Theory of Speech Acts

Linguistic utterance

Illocutionary force

- I know that
- I believe that
- I deny that
- I disclose that

Propositional content

- ...he is hurt.
- ...my headache is unsupportable.
- ...smoking is not allowed here.

Validity claim

Relation to the world

Subjective

Objective

Social
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Perceive & Do (Debug)
Knowing-in-action
Teaching & Facilitating
Interacting with Object

Practice & Discuss
Reflecting-in-practice
Environment
Interacting with Self & Society

Produce & Deposit
Reflecting-in-action
Artefact
Interacting with Subject

Communicativa: (Metalevel)
to affirm, to substantiate,
to justify, to moderate...

Constativa: to describe, to assert, to explain, to claim...

Regulativa: to legitimate, to authorize, to demand, to permit...

Expressiva: to disclose, to confess, to admit, to hold back...

Interacting
with Object

Coaching & Orchestrating
Tutoring & Managing

Robin Mason (1998)

eLearning Strategies

Asynchronic Communication (Forum, eMail)
Information Model (Static Website, Downloads)

predominantly virtual Learning (LMS)
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eTeaching-Strategies

Gilly Salmon (2000)

1: Access and Motivation
2: Online Socialization
3: Information Exchange
4: Knowledge Construction
5: Selforganisation

Educational Potentials

Book
- Text, Fotos, Images
- Linear
- Limited amount
- Presentation
- References
- Assessment indiv.

CD/DVD-ROM
- + Audio, Animation, Video
- Indiv. + Adaptive
- More but still limited
- + Automatic Feedback, Simulations
- Hyperlinks, Tooltips
- Assessment indiv.

Web
- + Communication (Chat, Forum)
- Collective Adaptive + Generative
- no limits
- + Communication, Social
- Dynamically Interconnected Web
- 360 Degree Assessment
What are VLEes?

- Web-based: Browser = central tool
  - ≠ locally installed educational software
  - ≠ CD-ROM
  - ≠ Distance Education
- A³ = Anytime, Anywhere, Anybody
- „Flexible Learning“, (competence based, student centered)
- Selforganised, supported and directed learning
- Face-to-interface and face-to-face (“blended learning”)

What are LMSes? (1): Functions

- Presentation of Content
- Communication-Tools
- Administration
- Evaluation Tools
- Tools for Practicing and Exercises
- Learning Management Systems (LMSs)
What are LMSes? (2): Definition

A Learning Management System (LSM) is a tool for the organization and the coaching process of webbased learning.

What are CMSes? (1): Functions

- Presentation of Content
- Processing of Content
- Management, Organisation of Content
- Update of Content
- Publication, Distribution of Content
- Reusability of Content
- Acquisition, Generation of Content
What are CMSes? (2): Principles

- Content separated from the form of the presentation
  - (via templates, stylesheets)
- Management of content components
  - (via metadata and database)
- Workflow Management
  - (via hierarchical and/or participative role concept: e.g. Managing Editor, Content Editor, Design Editor, Associate Editor, Member, Guest etc. buzz word: Webcommunity)

What are CMSs? (3): Types

1. **Production systems (P-CMS):** Traditional form of CMS
2. **Groupware, Collaborative Systems (C-CMS):**
   Asynchronous Communication and Interaction of members of a working (or learning) group
3. **Portal, Community-Content-Collaboration Systems (C3MS):** Communitybuilding
4. **Weblogs, Discussion oriented (D-CMS):** Micro-Content, Syndication/RSS-Feed, Trackback.
5. **Wiki, Editing oriented (E-CMS):** Everybody has the same full rights. Participative generation of content.
VLE/LMS/CMS/LCMS?

Virtual Learning Environments (VLEs)

Learning Management Systems (LMSs)

Content Management Systems (CMSs)

Learning- and Content Management Systems (LCMSs)

3 Levels of Abstraction

Educational Scenarios

Educational Interaction Patterns

LMS, CMS and other Tools
Communicative Action

Society

Subject

Object

P-CMS

D-CMS

C-CMS

Weblog

C3MS

Portal

C-CMS

Groupware

Wiki

Teaching Modell

I

II

III

Aspects of eLearning Standards - What for?

Interoperability

Cost Reduction through Reusability

Autonomy from Producers

Learning Biography independent from System
Goals of Standards

- **Interoperability**
  - Does the system work with other systems?

- **Re-usability**
  - Is content in other context reusable? (Learning Object)

- **Manageability**
  - Are there transferable notes on learning behaviour and content?

- **Accessibility**
  - Are learners able to access content whenever they need it?

- **Durability**
  - Does the learning environment still operate, even if technology has changed?

Thank you for your attention!

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