E-Learning meets E-Science: developments, challenges and strategies in higher education

OEB Learnshop
ONLINE EDUCA BERLIN, 28.-30. November 2012
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ONLINE EDUCA 2011:
E-Learning pushed by E-Science
(Pre-Conference Workshop by CeDiS, FU Berlin)

- Current Trends in E-Science
- E-Research in Practice: Digital Archives
- Transforming E-Learning Centers
ONLINE EDUCA 2012:
What we want to present today...

• E-Science practices: empirical findings
• E-Science competencies
• E-Science strategies: organizational development
What is E-Science?

Three perspectives:

a. Electronically Enhanced Science/ Data-intensive Science

b. Science 2.0: changes in scientific practices through digital networked information and communication media

c. An integrative perspective: the eScience – Research Network Saxony
What is E-Science?

Three perspectives:

a. **Electronically Enhanced Science/Data-intensive Science**

b. **Science 2.0:** changes in scientific practices through digital networked information and communication media

c. **An integrative perspective:** the eScience – Research Network Saxony
Electronically Enhanced Science

E-Science = Grid and research infrastructures

“(…) e-Science is not a new scientific discipline; rather, the e-Science infrastructure developed (...) should allow scientists to do faster, better or different research.“  (Hey & Trefethen 2005, S. 818)
E-Science is data-intensive science

„The world of science has changed, and there is no question about this. The new model is for the data to be captured by instruments or generated by simulations before being processed by software and for the resulting information or knowledge to be stored in computers. Scientists only get to look at their data fairly late in this pipeline. The techniques and technologies for such data-intensive science are so different that it is worth distinguishing data-intensive science from computational science as a new, fourth paradigm for scientific exploration.“ (Gray 2009(2007), xix)
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Networked Science

„For some subject areas it is in these distributed online communities that much of the relevant discussion in a subject takes place and not via the traditional forums of journals and conferences.“ (Weller 2011, S. 47)

Quelle: Stützer 2011
Open Science

“(…) at the one end, open access journals of peerreviewed research papers, and on the other open notebook science, where every thought, step, protocol and method is recorded live on the web (…)“
(Currier 2011: 4)

“(…) open new windows in the ivory tower of science and to contribute to the removal of the traditional, strict distinction between communication within science and communication between science and the outside world (…)“
(Nentwich & König 2012, S. 9)
Citizen Science

- Galaxy Zoo (http://www.galaxyzoo.org/)
- OPAL – Explore your local nature (http://www.opalexplorenature.org/)
- Fold it (http://fold.it/portal/)
Changes in scientific practices

„Digital scholarship is more than just using information and communication technologies to research, teach and collaborate; it also includes embracing the open values, ideology and potential of technologies born of peer-to-peer networking and wiki ways of working in order to benefit both the academy and society.“ (Weller 2011: 50f.)
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An integrative perspective

The eScience - Research Network Saxony

- Wissensrepräsentation
- Nutzungs- und Einstellungsforschung
- Management v. Ontologien
- Einflussfaktoren
- Mashups
- Motivation
- Sicherheitskonzepte für Forschungsumgebungen
- Kooperation und Peer Learning
- Visualisierung
- Handlungspraxen
- Erfolgskriterien von Web 2.0-Werkzeugen
- Modellierung v. Forschungs- und Kooperationsprozessen
- Geschäftsmodelle für eScience

TU Dresden/Media Center eScience – Research Network
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Our concept for today...

1 2 3

...three tables with three different topics

...30 minutes time for discussion at each table, one possibility to chance the table (= 60 minutes)

...final presentation and discussion at the end

Presentation of results
Our concept for today...

1. Practices
   ...
   Dr. Steffen Albrecht

2. Competencies
   ...
   Dr. Nina Kahnwald

3. Strategies
   ...
   Dr. Daniela Pscheida