Open Archives Meet Open Peer Review?
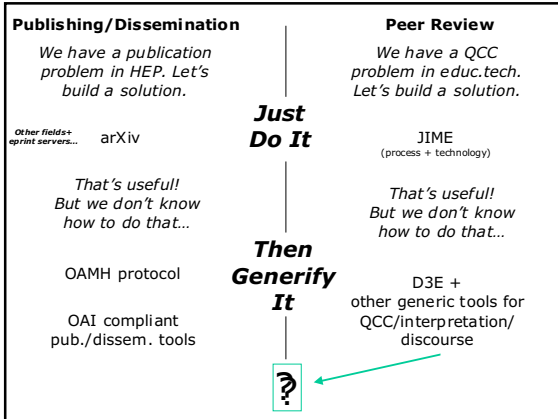
Simon Buckingham Shum
Gary Li

Knowledge Media Institute
Open University, UK
sbs@acm.org, G.Li@open.ac.uk

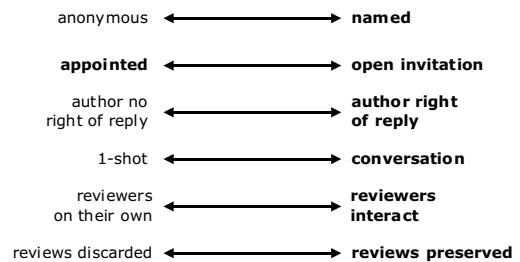*Collaborative work with Tamara Sumner (U. Colorado Boulder, USA) & Mike Wright (Unidata-UCAR,USA)*

Overview

- **Just Do It. Then Generify It.**
- **Peer Review Dimensions**
  - ➠ *Conversational, Co-Published, Open Peer Review*
- **Journal of Interactive Media in Education (JIME)**
- **Digital Document Discourse Environment (D³E)**
- **D³Emeets an OAI server…**
- **Future…**

Publishing/Dissemination		Peer Review
We have a publication problem in HEP. Let's build a solution.		*We have a QCC problem in educ.tech. Let's build a solution.*
	Just Do It	
Other fields+ eprint servers... arXiv		JIME (process + technology)
That's useful! But we don't know how to do that…		*That's useful! But we don't know how to do that…*
	Then Generify It	
OAMH protocol		D3E + other generic tools for QCC/interpretation/ discourse
OAI compliant pub./dissem. tools		
	?	

Peer review dimensions

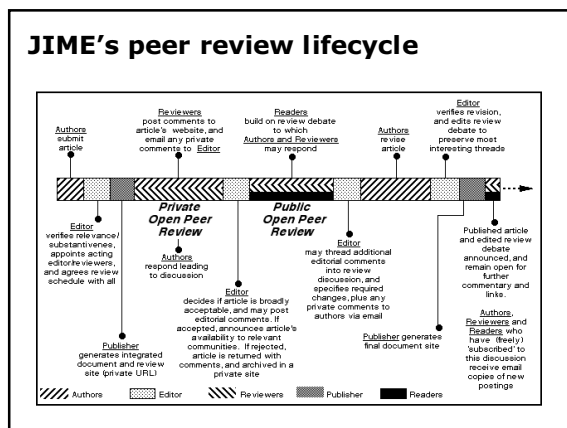|	
anonymous ⟷	**named**
appointed ⟷	**open invitation**
author no right of reply ⟷	**author right of reply**
1-shot ⟷	**conversation**
reviewers on their own ⟷	**reviewers interact**
reviews discarded ⟷	**reviews preserved**

Conventional peer review

- **All peer review models have +/-**
- **Anonymous, 1-shot peer review**
- **Pros**
  - **+ anonymity ➠ honesty**
  - **+1-shot job**
  - **+ "stick with what you know…"**
- **Cons**
  - **– anonymity ➠ lack of accountability**
  - **– research demonstrates its weaknesses**
  - **– typically no author right of reply**

A 'native internet' peer review model

Private+Public conversational OPR edited + co-published with article …

- **Reviewers *assigned* and *named/ hyperlinked***
- **Conversational/argumentation model (web)**
- **Private emails to editor if preferred**
- **Hybrid 2-step process: private then public**
- **➠ revision, publication + open for further comments**
- **Intellectual trace of the article's history**

Journal of Interactive Media in Education

An Interactive Journal for Interactive Media

www-jime.open.ac.uk

jime@open.ac.uk

JIME's peer review lifecycle

eJournals: Levels 1-6

Lancaster, F. W. (1985). The Paperless Society Revisited. American Libraries, 16, (8), 553-555

- **computers used for print production**
- **journal distributed in both print and electronic formats**
- **publication design is rooted in print, but articles are developed solely for electronic distribution**
- **interaction between authors and readers is possible; publications can evolve as a result of such interactions**
- **the inclusion of multimedia content**
- **both interactive participation and multimedia capabilities are supported**

JIME

- conversational open peer review underline intrinsic to journal's review model: *the social contract*
- authors encouraged to back claims about technology with demonstrations/ walkthroughs for readers and reviewers

Interactive demonstration of a CD-ROM

Readers can 'play' with the construction of a painting, as students were encouraged to do

Interactive demonstration (Java applet)

Readers can visualize the execution of a program using the Java applet tested with students
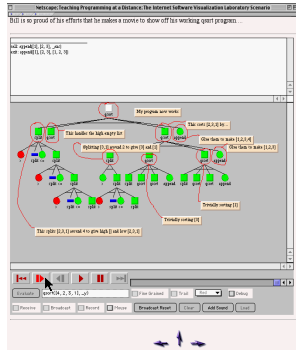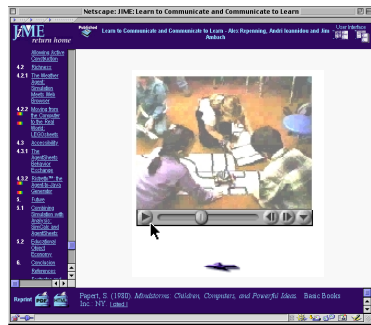
Audio-visual slide presentation, walking the reader through a system

The author introduces the multimedia system with a series of slides and commentary (streaming audio)
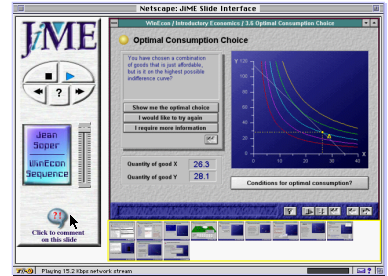
Video data

The authors include video clips showing their work (children programming a robot)

JIME

- conversational open peer review intrinsic to journal's review model: *the social contract*

- authors encouraged to back claims about technology with demonstrations/ walkthroughs for readers and reviewers

- articles tightly integrated with reviews in a web document-discussion interface

- edited review discussions co-published with final article

JIME document user interface (generated by D3E from an HTML submission)

Submission under review

PrePrint or *Published*

Peer review comments and discussion:

tightly integrated + co-published

Author links from text to discussion

linking from one review discussion to a relevant document

Go to top of Review Debate
▶ ● 4.2.1 The Weather Agent: Simulation Meets Web Browser
(JIME Editor (Simon Buckingham Shum)) 10 Mar 1998
▶ ▶ Re: 4.2.1 The Weather Agent: Simulation Meets Web Browser
(Josie Taylor) 12 Feb 1998
▶ ▶ ▶ **Re: 4.2.1 ...Simulation Meets Web Browser**
(Simon Buckingham Shum, S.Buckingham.Shum@open.ac.uk)
27 May 1998 15:03 GMT

"The ability to connect a simulation to this kind of live information results in a new genre of information medium unifying notions of simulation and web browser."

In this respect, you may be interested to see the very large scale use of the web for human-based educational simulations (no computational agents involved):

"Teaching Middle East Politics by Interactive Computer Simulation" (Vincent et al, under revision)
<http://www.jime.open.ac.uk/me-sim/me-sim.html>

Simon

Add Comment to: "**Re: 4.2.1 ...Simulation Meets Web Browser**"

▶ ▶ ▶ **Re: Re: Re: 4.4 Design Principle 4: Make the cognitive model visible** *(Chris DiGiano, digi@unix.sri.com)*
18 Feb 1998 20:27 GMT

Ahh. Now I understand. Thanks for clearing this up. By explicitly describing a series of inferences like you did in you response, I think you will make things clearer for other naive readers such as myself.

(End of Thread - This comment has no responses yet)

▼ ● **4.5 Design Principle 5: Build from specific to general** *(JIME Editor) 18 Dec 1997 13:50 GMT*

Document-related news updated in the discussion space

JIME email alert to new review comment

Review process initiated with introductory email to authors and reviewers

---

JIME changes...

- **...Author's experience**
  - *at least* as much feedback as normal
  - typically gain an enormous amount from defending against expert peers
  - sometimes need to be coaxed into responding!

- **...Reviewer's experience**
  - engage in discussions with both authors and reviewers
  - formulate reflective contributions to debates in a timely, professional manner

JIME changes... (cont/d)

- **...Reader's experience**
  - insight into how to interpret the text (esp. students)
  - 'dissenting voices' are not silenced

- **...the concept of a 'Publication'**
  - multimedia
  - hypertext structures possible
  - content can now be distributed across the formal document and the discussion space

Conversational Open Peer Review?

- **Pros**
  - Rigorous, accountable quality control
  - At its best can promote interdisciplinary dialogue
  - Reviewers can debate between themselves
  - Works because journal *Policies* and *Practices* have evolved with the *Technology*

- **Cons**
  - Both the technology and process are new
  - More resource intensive for authors and reviewers
  - Better for discursive, multidisciplinary fields?

Overview

- **Peer Review Dimensions**

- **Journal of Interactive Media in Education (JIME)**
  - Hybrid Open Peer Review on the web since 1996

- **Digital Document Discourse Environment (D3E)**
  - From an HTML file to interactive discussion document (used to publish JIME)

- **D3E meets OAI**

- **Future...**

D³E: Digital Document Discourse Environment

d3e.open.ac.uk
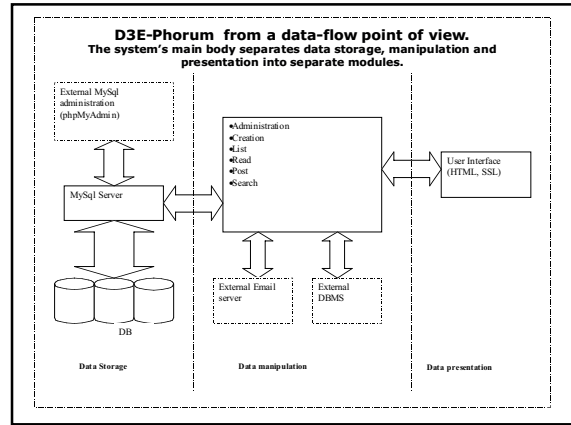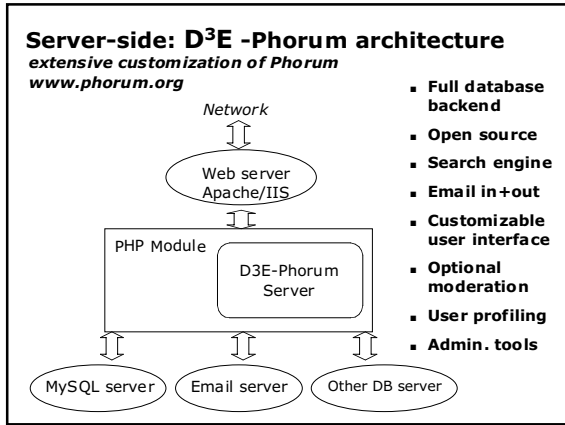
- From HTML file ➡ link-rich document-discussion user interface
- Used in many contexts
- Can be used to set up an eJournal using any peer review model
- Open source
- Components:
  - Client-side: Publisher's Toolkit Java application
  - Server-side: Discussion system
    - D3E-HyperNews
    - D3E-Phorum

D3E Publisher's Toolkit (Publisher's Tab)

D³E Publisher's Toolkit (Article Tab)

Slide 1: Server-side: D³E -Phorum architecture

Server-side: D³E -Phorum architecture
extensive customization of Phorum
www.phorum.org

Network

Web server
Apache/IIS

PHP Module

D3E-Phorum
Server

MySQL server | Email server | Other DB server

- Full database backend
- Open source
- Search engine
- Email in+out
- Customizable user interface
- Optional moderation
- User profiling
- Admin. tools

Slide 2: D3E-Phorum from a data-flow point of view

D3E-Phorum from a data-flow point of view.
The system's main body separates data storage, manipulation and presentation into separate modules.

External MySql administration (phpMyAdmin)

MySql Server

- Administration
- Creation
- List
- Read
- Post
- Search

User Interface (HTML, SSL)

DB

External Email server

External DBMS

Data Storage | **Data manipulation** | **Data presentation**

Slide 3: D³E meets an ePrint server

D³E meets an ePrint server

generating a D3E discussion space for an archive document…
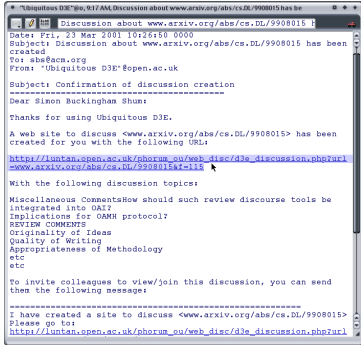
Slide 4: 'Ubiquitous D³E'

'Ubiquitous D³E'

…discuss *any* web document

e.g. pass it an OAI document URL + specify thread titles around which to focus comments and discussion

Ubiquitous D3E

The Digital Document Discourse Environment (D3E) is an ongoing project into new technologies for mediating discussion via the web. *Ubiquitous D3E* enables you to initiate a structured discussion about any web page. Just enter the address, and the discussion topics you want to focus on.

Web site to discuss:

Discussion Topics:

Your name:
Your email:

Generate D3E Discussion Site

Slide 5: Demo: generating a peer review discussion space for an arXiv document

Demo: generating a peer review discussion space for an arXiv document

Computer Science, abstract
cs.DL/9908015

From: Simon Buckingham Shum <s.buckingham.shum@open.ac.uk>
Date: Thu, 19 Aug 1999 08:51:29 GMT (580kb)

Representing Scholarly Claims in Internet Digital Libraries: A Knowledge Modelling Approach

Authors: Simon Buckingham Shum, Enrico Motta, John Domingue
Comments: 18 pages. Preprint, to appear: Proceedings of ECDL'99: Third European Conference on Research and Advanced Technology for Digital Libraries, Paris, France, September 22-24, 1999. Springer-Verlag Lecture Notes in Computer Science (Eds.) Serge Abiteboul and Anne-Marie Vercoustre
Report-no: KMI-TR-80
Subj-class: Digital Libraries; Artificial Intelligence; Human-Computer Interaction; Information Retrieval
ACM-class: H.3.7; H.1.2; H5.2; H.5.4; I.2.4; I.7.4

This paper is concerned with tracking and interpreting scholarly documents in distributed research communities. We argue that current approaches to document description, and current technological infrastructures particularly over the World Wide Web,

Discussions about arXiv.org/abs/cs.DL/9908015

Slide 6: Adding a comment on an arXiv document

Adding a comment on an arXiv document

Computer Science, abstra
cs.DL/9908015

From: Simon Buckingham Shum <s.buckingham.shum@open.ac.uk>
Date: Thu, 19 Aug 1999 08:51:29 GMT (580kb)

Representing Scholarly Claims in Internet Digital Libraries: A Knowl Modelling Approach

Authors: Simon Buckingham Shum, Enrico Motta, John Domingue
Comments: 18 pages. Preprint, to appear: Proceedings
ECDL'99: Third European Conference on Research and A
Technology for Digital Libraries, Paris, France, September
1999. Springer-Verlag Lecture Notes in Computer Scienc
Serge Abiteboul and Anne-Marie Vercoustre
Report-no: KMI-TR-80
Subj-class: Digital Libraries; Artificial Intelligence;
Human-Computer Interaction; Information Retrieval
ACM-class: H.3.7; H.1.2; H5.2; H.5.4; I.2.4; I.7.4

This paper is concerned with tracking and interpreting scholarly documents in distributed research communities. We argue that current approaches to document description, and current technological infrastructure particularly over the World Wide Web,

Discussions about arXiv.org/abs/cs.DL/9908015

RE: Connections to OpCit?
Author: Simon Buckingham Shum (sbs@acm.org)
Date: 01-15-2001 14:16

OpCit/CiteSeer will activate the citation link, but does not help in interpreting the document.

ScholOnto provides the researcher to say "why" X cites Y..., or challenge someone else's interpretation.

Simon

Reply to this comment

Sections and Comments | Date
Connections to OpCit? | 01-15-2001 14:12
RE: Connections to OpCit? | 01-15-2001 14:16

Email confirmation of new review discussion site

Future...

- **JIME discourse analyses**

- **D³E-OAi integration?**
  - depth of technical integration?
  - organizational models?

- **Scholarly Ontologies project** (2001-04)
  - "semantic OAI"...
    (Quality Metadata; citation semantics; scientometrics)

Knowledge Media Institute
PhD on OAI+Peer Review – deadline 31ˢᵗ May
kmi.open.ac.uk/studentships

Journal of Interactive Media in Education
www-jime.open.ac.uk

Digital Document Discourse Environment
d3e.open.ac.uk
(contact me to receive D3E release news)

Scholarly Ontologies Project
kmi.open.ac.uk/projects/scholonto