Transforming Cultures: Open Access and the Research-Teaching Nexus

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Higher Education Authority, Ireland
Academic Activity

Teaching

Scholarship

Research

Societal Engagement & Knowledge transfer

Administration

Knowledge transfer
Key challenges facing higher education are **unprecedented**.

The HE Financial Model appears unsustainable

The educational needs and aspirations of too many students go unmet

Investing in research, researchers & infrastructure is increasingly difficult

“To do better with less... We must begin by transforming our own culture”

- Diana Oblinger, Educause Review (Volume 46, Number 5, September/October 2011)
Society expects content to be freely available,

The different open movements are well coordinated

These movements need to join up to provide a more complete, higher-level educational experience.

OER should link more closely to full-text open-access articles and, where useful, to research data.

OER should be better placed in a pedagogical context; there should be a bigger push for open text books.

Benefits:
◦ advance public understanding of science and the arts
◦ promote research-led teaching,
◦ reduce costs to students and institutions
◦ support business development
◦ encourage wider access to further and higher education,
◦ recognize (and ideally reward) individual teachers and researchers and their colleges or universities
◦ improve the educational and research standing of the nation.

“Properly organized open resources can underpin online learning for both private and public education and "leisure" learning. It is a fundamental infrastructure for learning and teaching and should be supported as such by funders and policymakers in the education, research, and culture domains”

Malcolm Read, Educause Annual Conference, Philadelphia 2011
- [http://www.educause.edu/E2011/Program/FS08](http://www.educause.edu/E2011/Program/FS08)
Ms Kroes says that “open access to research results – both publications and research data – is not just a luxury”

www.surf.nl/open2011

“Open Access as a must for the Netherlands and Europe if they are to be able to compete internationally.
DART-Europe: Digital Access to Research Theses Europe
OpenAIRE & OPenAIREplus
Atomium Culture: Research, Media, Business, the Public
“We... have, potentially two equally useful open content environments – one well-managed and structured but expensive to create and maintain, the other more random in the reach of the content but almost free”

- Malcolm Read ‘Cultural and organisational drivers of Open Educational Content’ in The Tower and the Cloud, 2009

http://www.educause.edu/thetowerandthecloud

Leave it to Google? (and Flickr, YouTube etc.)
Not a new idea... [see Liz Lyon, 2003]
Projects 2010/2011

6 projects took place within 5 disciplines:
• Economics: Open Data and Publications
• Linguistics: Lenguas de Bolivia and Enhanced NIAS Publications
• Musicology: The Other Josquin
• Communication sciences: Enhancing Scholarly Publishing in the Humanities and Social Sciences
• Geosciences: VPcross.
Design of the Global MDP Portal
Research Based

Inquiry

Research Led

Building Knowledge

Research Tutored

Writing & Discussion

Content

Research

Content

Research

Process

Research Focussed – Demonstrative - Telling

Research-Teaching Nexus

Healey (2005), Griffiths (2004)
Research-Led Teaching

*Pure Research Vs. Pure Teaching*

... every student benefits from being part of a research-led culture and being taught by experts ...
“No Issue more basic in modern education than the relationship between teaching and research”
(Burton Clark, 1997)

- Synergy will not happen by itself
- Needs positive intervention

**Linking Teaching and Research**
• Experiential
  – A process which benefits students and staff

• Conceptual
  – In terms of societal needs and the development and communication and knowledge

• Operational
  – In terms of the potential reciprocity of teaching and research as learning activity

(Zetter, 2002)
Overview – Current Situation, General challenges, effective Teaching & Learning, Research led Teaching
Current Trends H.E.

Different expectations, motivations, skills and learning models

Growing demands

Corporate Educational Providers & Publishers

Lifelong Learning “Lifelong Research”

Role of the University socially & economically

Globalisation

Qualification frameworks

Curricula frameworks

The nature of a University?
Key Challenges

- Global knowledge based economies
- Population & Diverse Learners
- Broaden Access
- Increased flexibility
- Widen student engagement
- Motivation for staff & students
- Cutting Cost
- Remaining innovative and relevant
- Curricula Design drivers
- Quality
  - Pedagogical approach
  - Research led teaching
  - Assessment based learning
Adapting for creation of knowledge-based economies

- Knowledge-based economies
- Life long learning
- HE Sector growing in scale
- Wider access to education
- Research
- Direct economic impact
- Improving social inclusion

(HECTIC Report 2002)
Shifting Paradigms
... OER Lifecycle
An Open Learning Resource Service for Ireland (NDLR)

Some characteristics of an effective model
“digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research”

- **Content**
  - Full courses, courseware, content modules, learning resources, research data, collections and journals

- **Tools**
  - Software to support the development, use, reuse and delivery of learning content

- **Implementation Resources**
  - Intellectual property licenses to promote open publishing of materials, design principles of best practice

What does OER mean to the NDLR Community?

(OECD, 2007)
NDLR User Support
• 3 stage model

OER support & Licensing

Communities of Practice

Responsive Training programme & synergy events

“Content is King.....Context is God” (Casey, 2009)

Repository

Portal
Resources “in the wild”

- YouTube
- Vimeo
- Photo sharing through Flickr
- Wikipedia
- Advanced Search
- Wikis
The Emergence and Rise of Mass Social Media

Traditional Media
- Television
- Movies
- Radio
- Print

Institutional Control

Social Media
- Podcasts
- Vlogs
- Forums
- Wikis
- Enterprise 2.0 Platforms

Blogosphere

Syndication

Network effects

Consumption via comments, trackbacks, IM, feedback, etc.

Dion Hinchcliffe. Available online at: http://web2.wsj2.com
Creative Commons

- A movement that has evolved from open source software ideas and licences
- Estb. 2001 by a group of American legal academics, creators and entrepreneurs
- Generation of a number of easy-to-use licences so creators can share their work to the public while maintaining certain control over it
- Now 55 million works using CC licences for their blog postings, RSS feeds, Wikis, Presentation, etc, etc.

"Wanna Work Together?"
"... What holds them together is a common sense of purpose and a real need to know what each other know" Seely Brown & Solomon Grey (1995)

"... They are held together by a common interest in a body of knowledge and are driven by a desire and need to share problems, experiences, insights, templates, tools and best practices. Community members deepened their knowledge by interacting on an ongoing basis." Hubert, Newhouse & Vestal (2001)

"Knowledge is shared within the community based on relationships with others, rather than direct transactions therefore a primary purpose of CoPs is supporting knowledge flows between people" (Van Winkelen, 2003).
Open content made real by "Open Design"

Communities of Practice (CoPs)

Guiding design

Attribution

Repurposing

Improvement

Community development

Support

Exploiting the technology

Collaborative!

Representing pedagogies

Collectively, We do it better!

Creating learning opportunities for all!

"Wisdom of the Crowds" - Tim O'Reilly

Redefining "Openness"

Shared!

Cumulatively Better!

"Open Design" by Tim O'Reilly

An Evolutionary Pathway to establish sustainable communities of academics

Service team that is:
- Supportive
- Motivational
- Accessible
- Responsive
- Technologically Competent

Level 1
Support individual Academics within Uni/IoT (LIPS)

Level 2
Support collaborative Academics within Subject disciplines (LINCS)

Level 3
Encourage Sustainable Communities

Sustainable NDLR academic communities

Communities that are:
- Sustainable
- Manageable
- Active
- Relevant & Reflective
- Targeted

A Service which is embedded into the Partner Teaching & learning Centres
NDLR selectively harvests research content from institutional repositories.
Case Studies in Action

Click to view some examples of teaching, learning and research digital resources
Trinity College Dublin

TCD Lead Partner in LInCS 2009 Project - iMARK

iMARK - interactive Media Annotation Resource Kit

TCD and NDLR State of the Art History

Trinity College Dublin Local Innovation Projects

TCD Local Projects

Biological Sciences Smart CoP

“Images from The Brain Atlas”, Dr Paul Tierney, Dept of Anatomy. A set of unique images from the Department of Anatomy
Interactive ebooks of the Magazine of Magazines, a Mid-Eighteenth Century Limerick Publication

Project Coordinators:
The British Library, Michael Griffin (UL), Geraldine Sheridan (UL)
Liam Chambers (MIC), Yvonne Diggins (UL), ZI Parker (UL)
Darren Kavanagh (TCD).

Subject Coverage:
History/Arts & Humanities

Institutional Coverage:
UL, TCD, Mary Immaculate College, All Arts & Humanities Faculties

The key concept of this project was to develop interactive ebooks of the Magazine of Magazines, a mid-eighteenth-century Limerick publication, using a previously funded NDLR project 2009, “iMark Interactive Media Annotation Resource Kit”, developed by Prof. Frank Boland and Darren Kavanagh of Trinity College. The overall goal of this project was to create quality and innovative RLOs, which are digitized for lifelong learning and are easily sharable online. Currently, the original magazines are stored in the British Library researched on microfilm, which...

Project 2 LInCS 2010

LinCS 2010 Project 2 - Interactive ebooks of the Magazine of Magazines, a Mid-Eighteenth Century Limerick Publication

In conjunction with LinCS 2009 Project 6 - iMARK - interactive Media Annotation Resource Kit - Trinity College Dublin
Go on a Web Quest

Access Resources

Resources for Teachers

Online resources for teachers of Transition Year and Leaving Certificate students

learn more
Four Irish academic libraries collaborated to produce online learning resources to support bibliometrics and research assessment awareness and training. Bibliometrics is a set of methods used to measure research publications and is one key approach being used to assess research impact. This project produced a range of materials hosted on the NDLR that can be downloaded, customised and used under Creative Commons license by anyone providing bibliometrics awareness and training. This project lays the ground for further such collaborations of libraries and academic units to make host.
LInCS 2010 Project 3 - MyRI project - bibliometrics training materials

**Title:** MyRI project - bibliometrics training materials. Online Learning Resources to Support Bibliometrics and Research Assessment

**Project Coordinators:** Ros Pan, Ellen Breen, Anne McSweeney, Mary Antonesa

**Subject coverage:** Information Literacy

**Scope of the project**

Four Irish academic libraries are collaborating to produce online learning resources to support bibliometrics and research assessment awareness and training.

Bibliometrics is a set of methods used to measure research publications and is one key approach being used to assess research impact. This project will produce a range of materials hosted on the NDLR dSpace platform that can be downloaded, customised and used under Creative Commons license by anyone providing.
Reusable learning resource for clinical assessment training

Project Coordinators:
Dr. Derek O'Keefe University of Limerick

Subject Coverage:
Medicine, Clinical skills

Institutional Coverage:
UL, NUIG, University College Hospital Galway (UCHG)

This resource is a series of clinical video tutorials aimed at developing competence in patient communication, clinical examination and clinical diagnosis. These resources will be of significant interest to members of the medical community of practice and are being used by medical undergraduate and postgraduate students.
Reusable Learning Resources for Clinical Assessment Training: Links to the Articulate Version of the Resources

- Knee Exam
- Lower Limb Neurological Exam
- Respiratory Exam
- Upper Limb Neurological Exam
- Cerebellar Exam
- Cranial Nerve Exam
- CVS Exam
- GI-Exam
- PVE Exam
- Shoulder Exam
- Thyroid Exam

**LinCS 2010 Project 6 - Clinical Assessment Training**

NDLR UL Derek O Keeffe
Reusable learning resources for clinical assessment training from NDLR PLUS

**Title:** Reusable learning resources for clinical assessment training

**Project Coordinators:** Derek O’Keeffe Department of Science and Engineering. This application is based on cross-discipline collaboration between colleagues, at University of Limerick (UL), National University of Ireland Galway (NUIG) and University College Hospital Galway (UCHG).

**Subject coverage:** Clinical assessment is a fundamental part of medicine...
The Principles of Infection Prevention and Control; the development of reusable learning objects (RLO’s)

Project Coordinators:
Eimear Burke (NUIG), Evelyn Byrne (NUIG), Anne Fahy (UL)
Kevin Johnson (UL), Liz Kingston (UL), Catherine MacArthur (HSE)
Mairead Moloney (UL), Jill Murphy (UL)

Subject Coverage:
Medicine / Infection control

Institutional Coverage:
UL, NUIG, Ennis General Hospital, HSE West.

Reusable learning resources
An online learning package was developed, on the topic of infection prevention and control, using Articulate Studio ’09 e-learning software.

Health Smart CoP
The collection can be accessed via the Health Smart Community of Practice (CoP) of the NDLR, in the Infection Prevention and Control collection.
**Project Snapshot!**

**Title:** The Principles of Infection Prevention and Control; the development of reusable learning objects (RLO’s).

**Project Coordinator:** Liz Kingston, UL

**Collaboration:** University of Limerick, NUI Galway, HSE West

**Overview of Project**

**Development team**

The project was a collaborative initiative led by the Department of...
Original Research Project involving postgraduate Researchers - data displayed in Omeka.

Follow-on research project: qualitative data stored in separate repository.

New requirements:

a) connect the data &
b) provide access for students to create data-based ‘exhibits’ via Omeka.

Bridge-IT/Lifescapes: Learning Built on Qualitative Research Data
Omeka harvests TARA for research & teaching purposes
Shared Challenges and Next Steps
1. Making eLearning core to University Teaching and Learning
2. Improving eLearning Collaboration and Sharing within eLearning HE Sector
3. Researching and Improving educational quality of eLearning experience
4. Adoption of Standards and improve interoperability
5. Addressing eLearning Costs
   ◦ Resource requirements
   ◦ Academic (Staff) Development and skills acquisition

(Universities Ireland 2004)
Both communities:
- Use the same OAI-PMH framework
- Have a mix of distributed content providers (repositories), centralised content providers & subject and project-based services.
- Use metadata aggregators & metadata brokers
- Traditional means of dissemination are changing rapidly
- Audience for outputs is also changing
- Are growing fast in terms of content and engagement
- Outputs are becoming more similar and crossing over one another
- Developments in open licensing such as Creative Commons
• Metrics and rewards are different
• There are issues of attribution and recognition for teachers and research data providers
• Ownership and copyright issues can be greater in OER and research data
• There are currently more personal benefits for researchers who make publications available on OA
• Both research data and OER can be composite resources... but research publications may become more similar (enhanced publications)
• They use different standards, metadata, vocabularies and identifiers
• Research publications are more usually linked with CRISs (joining People, Projects & Publications)

Paradox: these communities are made up of the same people ‘wearing different hats’. How can these activities remain separate?
Ireland’s HEA supporting research, teaching and learning

- Media & a/v archives
- Business Intelligence, Bibliometrics
- Institutional repositories
- Library-based digital resources
- Proposed National Research Platform
- National Academy for Teaching & Learning
- BlueBrick.ie
The Opportunity

Extending an open knowledge infrastructure

The opportunity is found in the emerging convergence among open elements in the academic production of knowledge today.

Four open initiatives – open access, open data, open source software, and open educational resources – are not only advancing developments in research and education, they are reducing costs in these areas, making better use of existing computing power, enriching learning experiences, and providing new opportunities for service industries in this knowledge-based economy.

European Commission would do well to consider ways of developing policies, research programs, and infrastructure platforms that support and advance the convergence of these four elements.

OpenAIRE represents a first step. Additional work is needed in other areas to achieve a broader opening of research, scholarship, and learning.

Developing the opportunity

Provide similar programme for the support of open publishing platforms.

Open platforms can expand to include the archiving and indexing of data sets, research instruments, and open educational resources.

Better sharing and remixing of these materials will follow, while enabling full attribution and origin rights.

Setting up environments for the creative use and re-use of these resources would open new possibilities for the extension of knowledge, for new forms of collaboration, and it would facilitate their integration in teaching at all levels.

An expansion of the EC communication strategies, so that the EC places greater emphasis on the academic, professional, and public value of the humanities and social sciences, as well as the sciences. While open access is made possible by digitization, it is not so much a radical change as a further chapter in the historical expansion of people’s right to knowledge.
"Open Access, Open Data and Open Educational Resources, a new Trinity for a new Enlightenment"

- Prof. John Willinsky (Stanford), Keynote Address at OpenAIRE.eu Launch Event, 2nd Dec. 2010, Ghent, Belgium
References

acknowledgements

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- Muiris O’Connor (HEA)
- National Digital Learning Resource, Ireland (NDLR)
- RIAN: Ireland’s Open Access Research Portal http://rian.ie
- Dr Kathleen Tierney & Dr Deirdre O’Donnell (TCD, Lifescapes Project)
- Dr Danielle O’Donovan, Professor Roger Stalley, Caroline McGee & Dr Deirdre O’Regan (Gothic Past)
- The Global Masters in Development Practice (Lead: Columbia University NYC)
- OpenAIRE & OpenAIREplus (http://www.openaire.eu)
- Dart-Europe: Digital Access to Research Theses Europe (http://www.dart-europe.eu)
- Maurice Vanderveesten (SURF Foundation)
- Dr Chris Pegler, Open University (UK)
- Amber Thomas (JISC)
- John Casey, University of the Arts, London
- Yvonne Diggins (University of Limerick)
- Darren Kavanagh (NUI Maynooth)
- Dr Derek O’Keefe (University of Limerick)
- Professor Vinnie Wade, Trinity College Dublin
- David Jennings (UCD)
- Dr Ciara O’Farrell (Trinity College Dublin)
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