Evalueringsinstitut &
Danskeprofessionshøjskoler
10th May 2017 **@DrHWalkington**

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Students as researchers, students as authors: strategies for engaging students in research and dissemination

Prof. **Helen Walkington**

with a student perspective from

Alex Hamilton

Outline

Students as Researchers

- Nexus and partnership frameworks
- Effective practices

Students as Authors

- Research dissemination, within and beyond the curriculum
- Journals, conferences, and more

Institutionalisation – what works?

Theoretical framework

Undergraduate research - high impact educational practice (Kuh 2008)

Research is for *all* students (Walkington & Jenkins, 2008)

Students 'co-construct' knowledge via dialogue with each other and their teacher as part of an academic 'community of practice'. (Vygotsky, 1978; Lave & Wenger, 1998)

Self-authorship - the central goal of HE in the 21st Century (Baxter-Magolda, 2004)

UK literature – Students as researchers?

- Consumers (Molesworth *et. al.*, 2010)
- Clients (Bailey, 2000)
- Producers (Neary & Winn, 2009)
- Co-producers (McCulloch, 2009)
- Partners (Healey, Flint & Harrington, 2014)
- Change agents (Dunne & Hutchinson, 2010)

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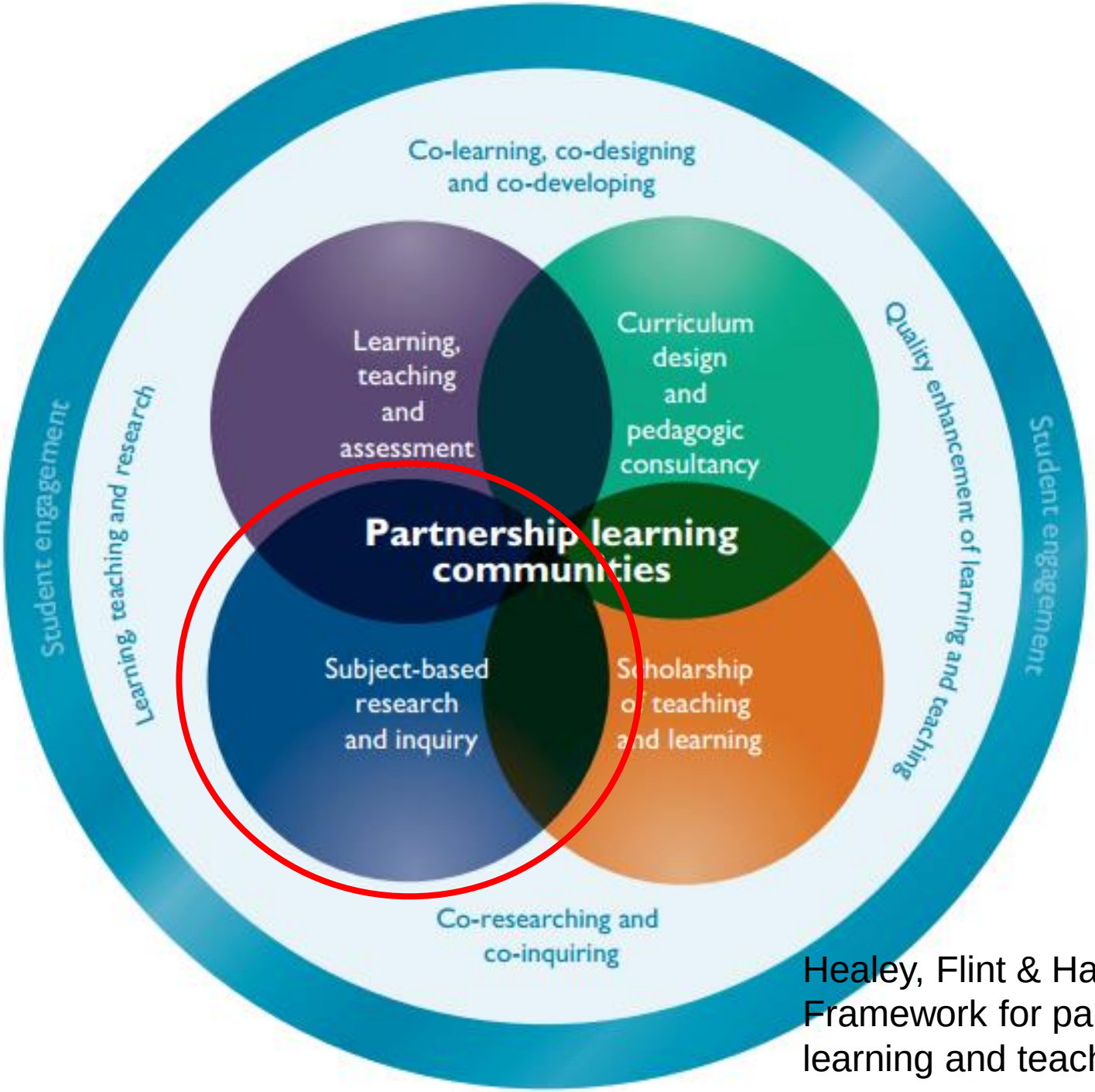

Healey, Flint & Harrington, 2014. Framework for partnership in learning and teaching

The research - teaching nexus

based on Healey 2005; Levy & Petrulis 2011

Navigating the research landscape

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- Student initiated, consulting university staff – potential for student to become ‘expert’ (e.g. dissertation)
- Staff initiated research, decisions shared with students
- Students are informed and consulted
- Students are given research problems – guided research

8 International strategies
to strengthen the research – teaching nexus

1. Interview researchers (guest lecturers, academics, email authors)
2. Scaffold research design (support the process of framing enquiry)
3. Scaffold the reading process (journal clubs)
4. Scaffold the writing process (inheritance)
5. Student centred active learning (PBL, simulations, focus on conceptual understanding rather than memorising content)
6. Authentic research (business, consultancy, live projects)
7. Authentic audience (conference, journal, public web pages)
8. Reflective assessment of learning process (e-portfolio's)


Highly commended
2004
Society ERHS
Class 24
Awarded to FRED PALMER

Sweepstake!

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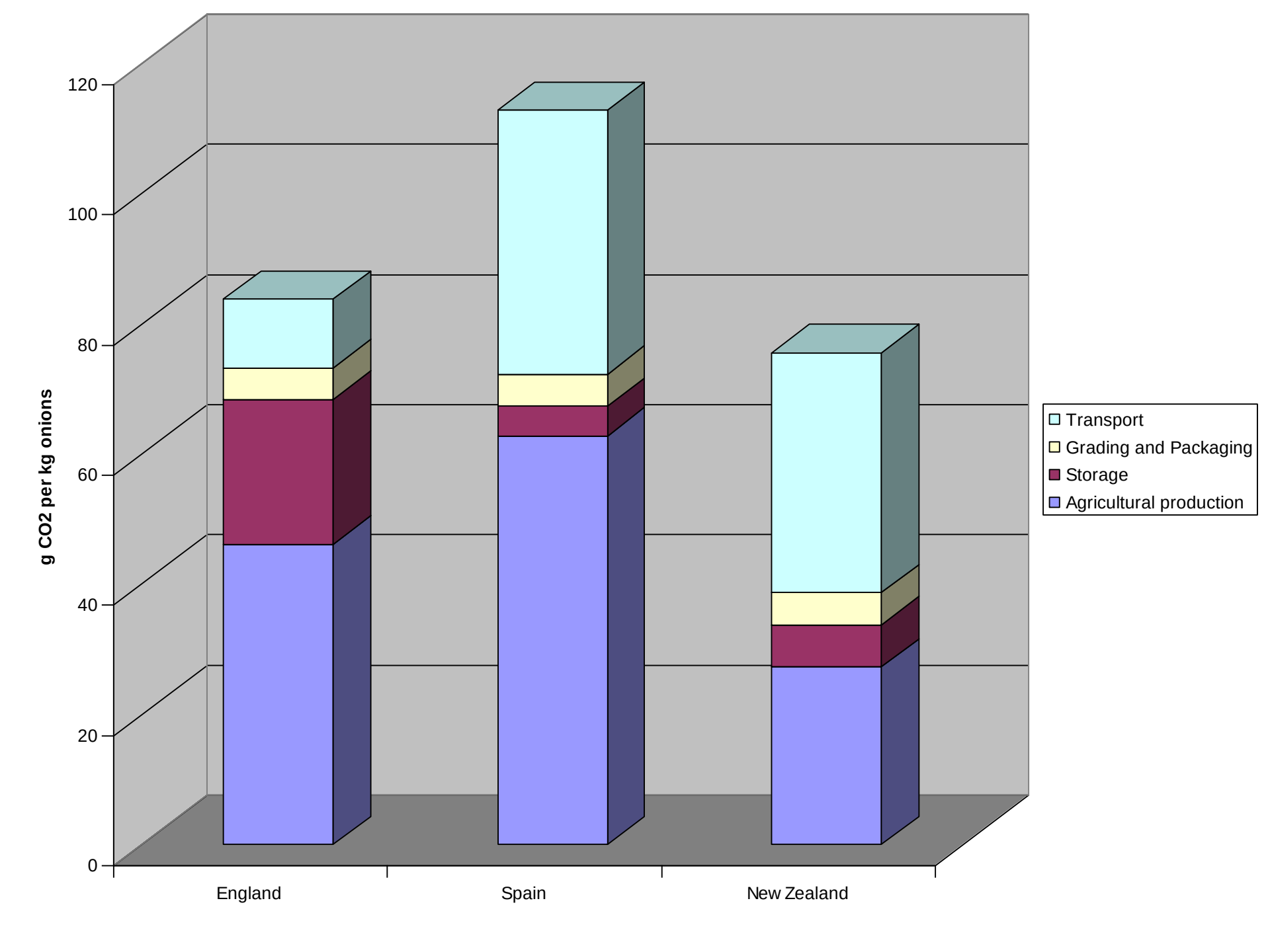
TESCO onions come from 3 farms:

New Zealand, Spain, England

Conventional production (not organic)

Rank in order of lowest to highest carbon footprint


120
100
80
60
40
20
0
g CO2 per kg onions
England
Spain
New Zealand
Transport
Grading and Packaging
Storage
Agricultural production

IMPACT of student research

Food miles or carbon labelling?

Buy Local? Or Buy Global?

Or …

Two people mark it and it sits on a shelf, gathering dust …

The Undergraduate Research Experience

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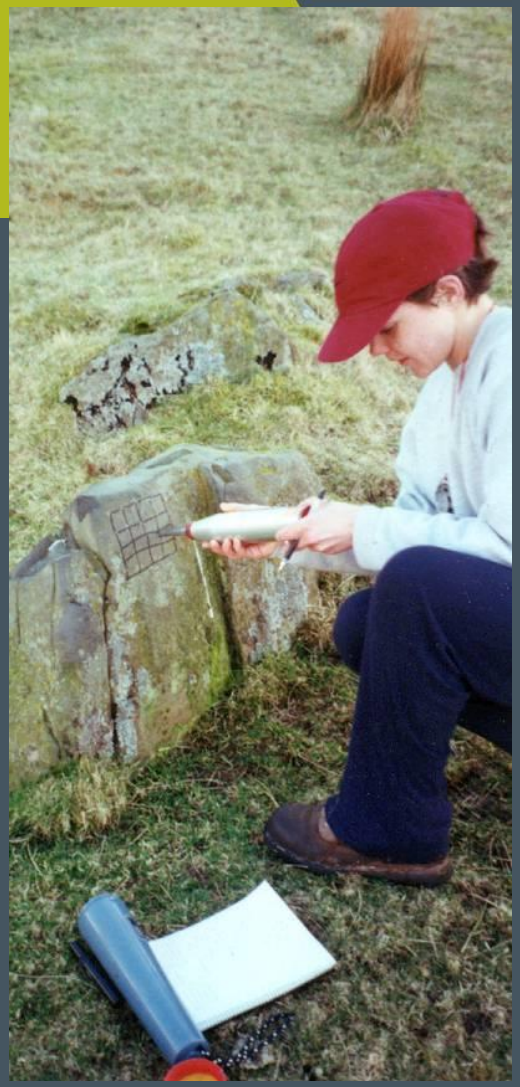

Research cycle

Mind the gap!

"Every university graduate should understand that ***no idea is fully formed until it can be communicated,*** *and that the organisation required for writing and speaking is part of the thought process that enables one to understand material fully.* ***Dissemination of results is an essential and integral part of the research process.****"*

(Boyer Commission, 1998: 24)

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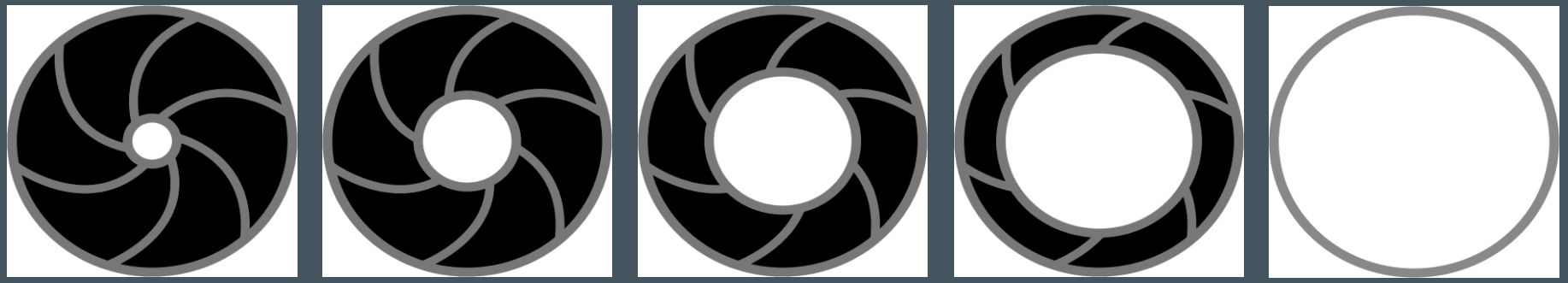
Aperture, Audience, Authenticity



Within the curriculum

Beyond the curriculum

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Aperture 1 – Next year's cohort

Student Theatre Appreciation Society

Theatre Reviewing Blog

Aperture 2 – The Discipline

Chemistry -the history of Chlorine

Teaching in Higher Education
Vol. 10, No. 3, July 2005, pp. 387–394

Turning an undergraduate class into a professional research community

Hasok Chang*
University College London, UK

I describe here an ongoing pilot project aimed at a full integration of teaching and research at the undergraduate level. Our chief innovation is the mechanism of inheritance: each year students receive a body of work produced by the previous group of students and make improvements and additions to it; this process can be repeated until publishable materials are produced. This is part of a system of learning that enables students to function as a real and evolving community of researchers.

Chang, H; (2009) Chlorine: Undergraduate Research on an Element of Controversy. **J CHEM EDUC** , 86 (4) 418 - 420.

Aperture 3 – A Public Blog for the local community

Tutor-mediated student publishing to a public blog and photo-sharing space (Flickr)

OB1

YEAR ONE ARCHITECTURE AND INTERIOR ARCHITECTURE OXFORD BROOKES UNIVERSITY

Friday, 7 February 2014

Cowley model and public consultation

OB1

YEAR ONE ARCHITECTURE AND INTERIOR ARCHITECTURE OXFORD BROOKES UNIVERSITY

WEDNESDAY, 4 JUNE 2008

OUR LAUNCH YEAR

3000

OB1 has been visited by 3000 unique visitors in our launch year. This is great. In this time we have had tutorials, reviews, shows, field trips, workshops, forums and lectures. Well done and keep clicking in as we are currently working on a project under Hungerford Bridge for the London Festival of Architecture. We will be posting updates.

INTRODUCTION

Welcome to OB1 - Oxford Brookes University Year One Architecture and Interior Architecture Blog... launched in 2007/08 as a virtual resource to reflect upon and communicate our design work.

OB1 GALLERY

Live project pedagogy

Aperture 4 – multidisciplinary national Conference

Aperture 5 – International

Design & Engineering

FORMULA HYBRID THE FUTURE ON TRACK.

Co-curricular
Undergraduates and postgraduates in teams

An undergraduate research journal

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Assignment in journal article format

Successful Publication

Ownership

Understanding

Creativity

Achievement

Applying constructive criticism

Critical evaluation

CV

Academic recognition

Further dialogue

Motivation to publish more

Within the curriculum

and Beyond

Journals as learning spaces

"I found it hard to change between writing as a learner to writing as a teacher."

Iterative process

Co-production: trust **written** advice of others

Detailed **feed-forward**

Critical skills

Recognition

What's missing? - The desire for dialogue

Walkington, H., 2012. Developing dialogic learning space: the case of online undergraduate research journals. *Journal of Geography in Higher Education* 36 (4), 547-562.

GEOverse Journal Article – Alex's experience

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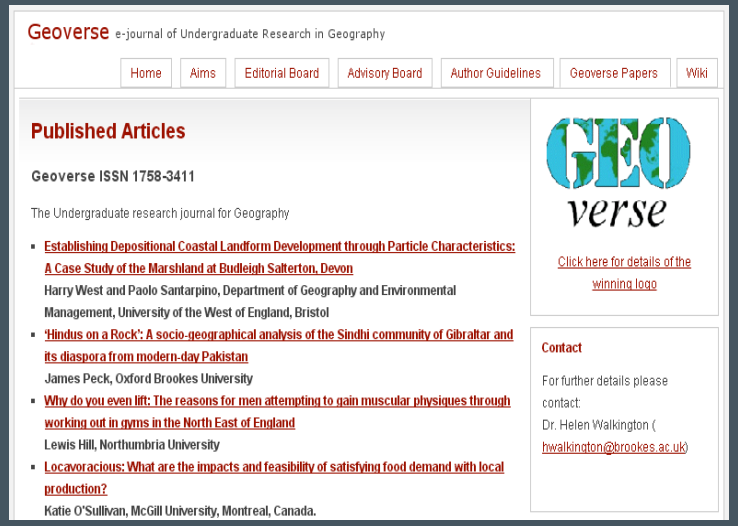
- Group project on a provided topic – Retirement migration
- Journal article assessment
- Simulated peer review by tutor
- Submit to *GEOverse*
- Authentic experience of peer review
- Lack of dialogue



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Departmental conferences

The right to asylum: a critical analysis of policy & practice

A map of Headington according to the 3 Gunas

The Evolution of Sabkas

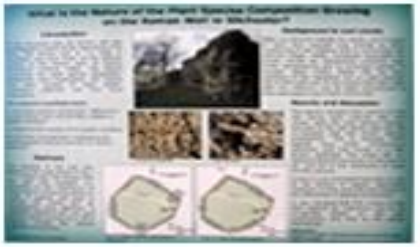
Should we buy Organic?

Revealing Culture & History through Art

Human-environment interactions on Exmoor

Adaptations in Dry Land Ecosystem

Impacts of the Gaia Theory on the Western World



What is the Nature of the Plant Species Coposition Growing on the Roman Wall in Silchester?

Multidisciplinary National conferences - Method

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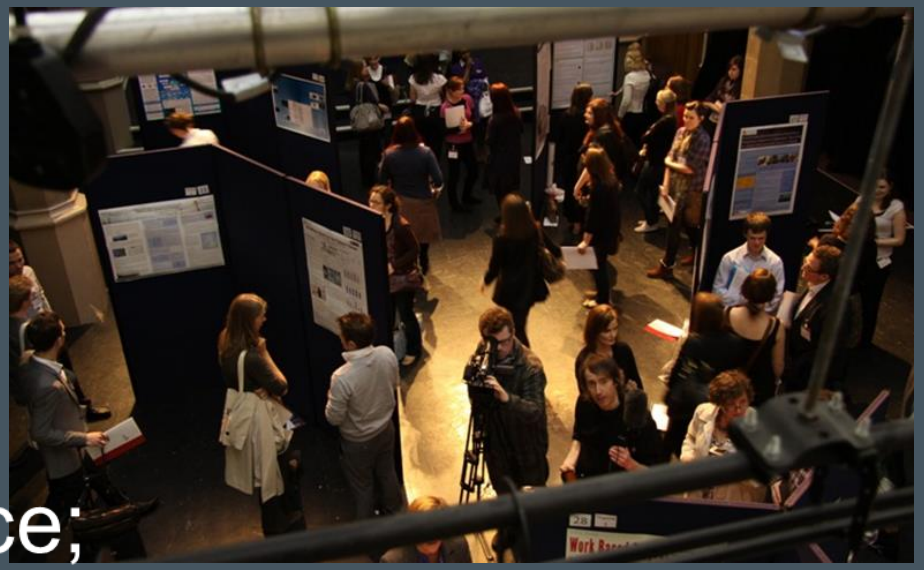
BCUR BRITISH CONFERENCE OF UNDERGRADUATE RESEARCH	Students presenting		
	Poster	Paper	Total
BCUR 2012 Warwick	71	98	169
BCUR 2013 Plymouth	94	81	175
BCUR 2014 Nottingham	154	136	290
(% sample)	49 / 319 (15%)	41 / 315 (13%)	90 / 634 (14%)

Results

BRITISH CONFERENCE OF UNDERGRADUATE RESEARCH



Language;

Liminal space;

Empowerment;

An authentic experience;

Escaping institutional and disciplinary ‘bubbles.’

Walkington, H. Hill, J., Kneale, P. 2015. Reciprocal Elucidation. A student led pedagogy. Higher Education Research and Development 36 (2), 416-429.

Reciprocal elucidation

'It is completely different to presenting within university because you can be questioned by people you are not studying with, who are likely to have expertise in other areas relevant to your research. This can result in ***bidirectional exchange of information*** *in which both myself presenting, and the student asking the questions, gain greater knowledge of the subject area.' (R52)*

British Conference of Undergraduate Research (BCUR) Alex's experience

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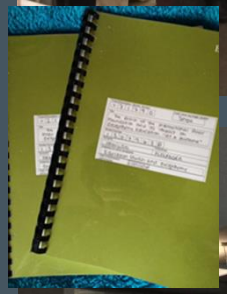
- Immediate feedback
- Learning from others
- **Defended** the research
- Escape the bubble of geography
- Too late to impact on my marks!



Spot the difference!

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Writing an article:

- Co-production: trust written advice of others
- Detailed feed-forwa
- Critical skil
- Recogni
- LACK
  CONVERSAT

Presenting at a conference:

- Critical thinking through di ogue
- tant feedback
- kills
- n
- E TO MAKE
  IANG
- NO LEGACY

DIALOGIC FEEDFORWARD

Principles for undergraduate research dissemination

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- Build ‘publication’ into degree programmes
- Use student research findings in the Curriculum
- Engage students in the publication process *(e.g. editors/reviewers, sourcing articles, conference / event organisation, marketing and promotion, TV…)*
- Make use of digital technologies *(wiki, blog…)*
- Scaffold publication opportunities *(build confidence)*

Institutional approaches

- Get Published!

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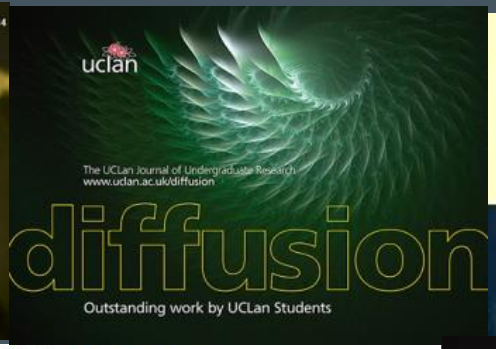
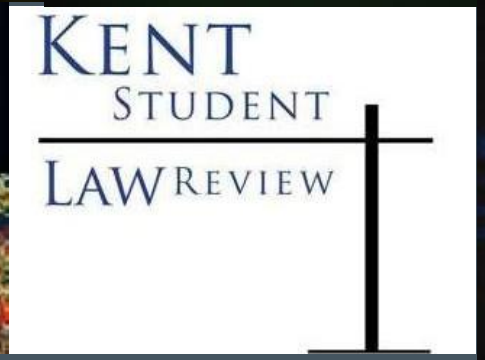
UNIVERSITY OF LINCOLN





WATCH https://www.brookes.ac.uk/staff/pese/get-published/

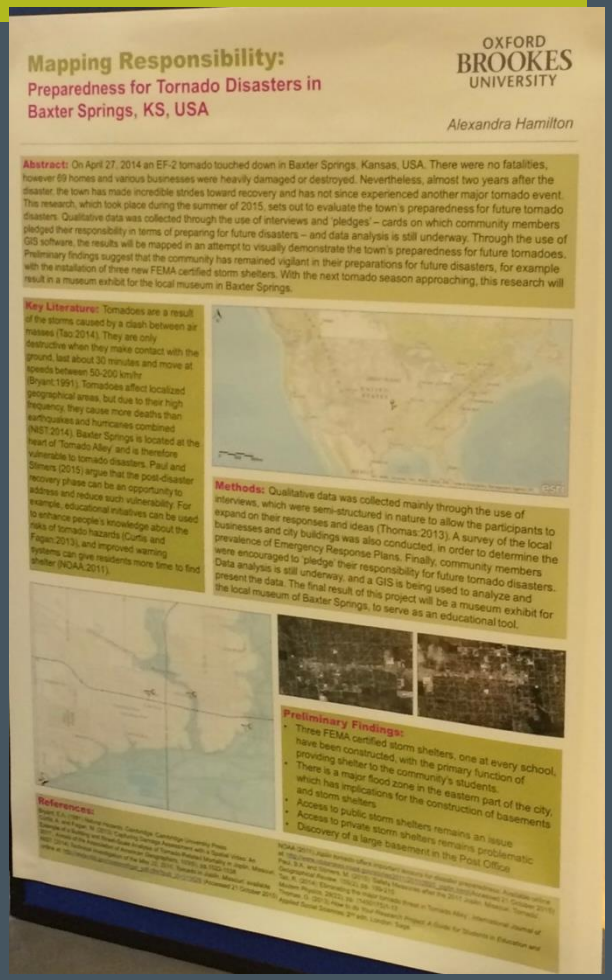
MUSEUM EXHIBIT

Tornado disaster, Kansas, USA.

- Independent study
- Community involvement
- Made a difference **during** the research
- Open to the public
- Static
- Less discoverable

Get Published! Conference and Open Access repository

- University wide conference (open to public)
- Being published in student research repository (online)



Mapping Responsibility:
Preparedness for Tornado Disasters in Baxter Springs, KS, USA

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Alexandra Hamilton

Abstract: On April 27, 2014 an EF-2 tornado touched down in Baxter Springs, Kansas, USA. There were no fatalities, however 69 homes and various businesses were heavily damaged or destroyed. Nevertheless, almost two years after the disaster, the town has made incredible strides toward recovery and has not since experienced another major tornado event. This research, which took place during the summer of 2015, sets out to evaluate the town's preparedness for future tornado disasters. Qualitative data was collected through the use of interviews and 'pledges' – cards on which community members pledged their responsibility in terms of preparing for future disasters – and data analysis is still underway. Through the use of GIS software, the results will be mapped in an attempt to visually demonstrate the town's preparedness for future tornadoes. Preliminary findings suggest that the community has remained vigilant in their preparations for future disasters, for example with the installation of three new FEMA certified storm shelters. With the next tornado season approaching, this research will result in a museum exhibit for the local museum in Baxter Springs.

Key Literature: Tornadoes are a result of the storms caused by a clash between air masses (Tao:2014). They are only destructive when they make contact with the ground, last about 30 minutes and move at speeds between 50-200 km/hr (Bryant:1991). Tornadoes affect localized geographical areas, but due to their high frequency, they cause more deaths than earthquakes and hurricanes combined (NBT:2014). Baxter Springs is located at the heart of 'Tornado Alley' and is therefore vulnerable to tornado disasters. Paul and Stimers (2015) argue that the post-disaster recovery phase can be an opportunity to address and reduce such vulnerability. For example, educational initiatives can be used to enhance people's knowledge about the risks of tornado hazards (Curtis and Fagan:2013), and improved warning systems can give residents more time to find shelter (NOAA:2011).

Methods: Qualitative data was collected mainly through the use of interviews, which were semi-structured in nature to allow the participants to expand on their responses and ideas (Thomas:2013). A survey of the local businesses and city buildings was also conducted, in order to determine the prevalence of Emergency Response Plans. Finally, community members were encouraged to 'pledge' their responsibility for future tornado disasters. Data analysis is still underway, and a GIS is being used to analyze and present the data. The final result of this project will be a museum exhibit for the local museum of Baxter Springs, to serve as an educational tool.

Preliminary Findings:

- Three FEMA certified storm shelters, one at every school, have been constructed, with the primary function of providing shelter to the community's students.
- There is a major flood zone in the eastern part of the city, which has implications for the construction of basements and storm shelters
- Access to public storm shelters remains an issue
- Access to private storm shelters remains problematic
- Discovery of a large basement in the Post Office

References:

Top down AND Bottom up!

Resourcing for research experiences;

Institutional prioritisation of research literacy;

Curriculum design of research pathways at programme level;

Engagement with external events (PIP, BCUR);

Support in-house innovation e.g. Teaching fellowship (Reward and recognition);

Celebrate student success - Research repository

TEF and REF

Research-Informed Teaching

Funding linked to quality

Measuring quality teaching

IRIS (Institute for Research in Schools)

Walkington, H., *et al. 2016. Salient Practices of Award Winning Undergraduate Research Mentors: A MultiInstitutional, International Study of What Effective Mentors Do. Elon, NC*

Conclusion

- We can *personalise* and *professionalise* the curriculum through providing research and dissemination opportunities
- Structure authentic research experiences for students to build confidence within and beyond the curriculum
- Institutional research cultures and strategies can be inclusive of students as researchers, start early
- The research – teaching nexus is a good starting point for networking and sharing between disciplines / institutions

References

•Baxter Magolda, M.B. 2004. Self-authorship as the common goal for 21st century education. In . *Learning partnerships: Theory and models of practice to educate for self-authorship*, ed. M. Baxter Magolda and P. M. King, 1-36. Sterling, VA: Stylus.

•Boyer, E.L. 1998. *Reinventing Undergraduate Education: A Blueprint for America's Research Universities.* Boyer Commission on Educating Undergraduates in the Research University Stony Brook, NY: State University of New York–Stony Brook.

•Healey, Flint & Harrington, 2014. Framework for partnership in learning and teaching York: HEA

•Shanahan, et al. 2015. Ten Salient Practices of Undergraduate Research Mentors: A Review of the Literature. **Mentoring and Tutoring:** Partnership in Learning. 1-18.

•Walkington, H. 2008. Geoverse: piloting a National e-journal of undergraduate research in Geography. **PLANET** 20, 41-46.

•Walkington, H., Hill, J., Kneale, P. 2016. Reciprocal elucidation: a student-led pedagogy in multidisciplinary undergraduate research conferences **Higher Education Research and Development** 36 (2), 416-429.

Higher Education Academy resources

- Healey, M. Jenkins, A & Lea, J. 2014. Developing research based curricula in College-based Higher Education
- Walkington, H. (2016) Engaging Students in Research
- Walkington, H. (2016) Pedagogic approaches to developing students as researchers, within the curriculum and beyond
- Walkington, H. (2015) Students as researchers
- Walkington, H. (2016) The context of students as researchers
- Walkington, H. (2016) Levels of Student Participation in Research
- Walkington, H. (2016) Disseminating Student Research Findings

Questions?

hwalkington@brookes.ac.uk

@DrHWalkington

10 salient mentor practices

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1	Strategic pre-planning to respond to students' varying needs and abilities throughout the research process.
2	Set clear, scaffolded expectations.
3	Teach the technical skills, methods, and techniques of conducting research in the discipline.
4	Balance rigorous expectations with emotional support and appropriate personal interest in students.
5	Build a sense of community among members of the research team.
6	Dedicate time to one-on-one, hands-on mentoring.
7	Increase student ownership of the research over time.
8	Support students' professional development through networking and explaining norms of the discipline.
9	Create intentional, laddered opportunities for peers and "near peers" to learn mentoring skills and to bring larger numbers of undergraduates into scholarly opportunities.
10	Encourage and guide students to share findings in presentations and writing.