The teaching research nexus and the first year student experience: What are the possibilities?

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Overview

- Something about the First Year Experience (FYE)

- What are the links to the FYE?

- Some strategies: esp –

  – Academic skills/ literacies as a rallying point or an 'integrating FYE concept'

  – 'A progressive continuum: fostering 'research-mindedness early''

  See esp Scottish Enhancement Themes
  ~ Research-Teaching Linkages *and*
  ~ FYE Enhancement

- Some FY examples
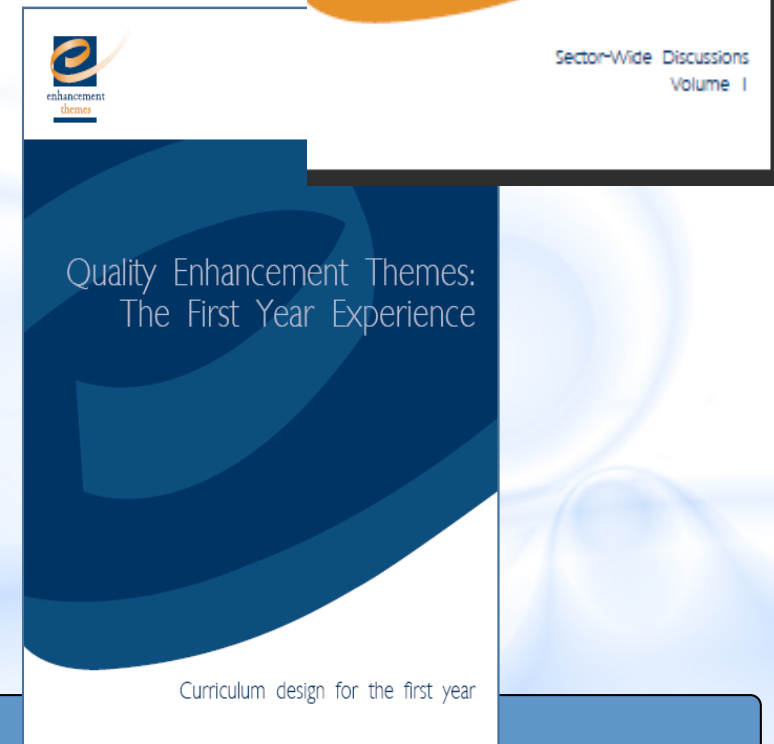
Critical framing questions (esp re FY)

- Is this important for students?

- For *all* students?

- If latter –
  - in curriculum (cf extra-curricula or co-curricula *unless* connected to curriculum)

  AND

  - scaleable

- WHAT will be assessed – eg product or process?

- HOW will it be assessed?

Student success [at university] is largely determined by student experiences during the first year.

Upcraft, M. L., Gardner, J. N., & Barefoot, B. O. (Eds.). (2005). *Challenging and supporting the first-year student*. San Francisco: Jossey-Bass.

What matters to retention

- **Preparedness**
- **Finances**
- **Peers**: learning 'profoundly a social experience';
- **Expectations:** mismatch; 'how things work around here';
- **Student support:** coordinated and 'just-in-time' & 'just-for-me';

- **Program choice/** certainty
- **Staff**: contact with staff & teaching quality
- **Course design**: Clear, coherent, responsive, flexible, relevant, engaging, achievable, & motivating;
- **Assessment**: relevant, consistent & integrated;
- **Feedback**: early, prompt & constructive.

(Eg: Krause et al, 2005; Scott, 2006; Yorke & Longden, 2008)

A 'transition pedagogy' for a mass sector

http://www.altc.edu.au/resource-first-year-learning-experience-kift-2009

- Because of **diversity** – there is a need to change our curriculum approaches
    - *Widening access has fundamentally changed the assumptions that can be made about students' [entry] skills and knowledge. This has not always led to the necessary changes in learning, teaching and assessment approaches.* Johnson (2002, 11)

- Because of **changing patterns of student engagement** (e.g. working longer, attending less) we need to focus on contact we do have with our students
    - ***Therefore*** primary focus on (virtual & physical) classroom
    - ***If*** learning outcome important must embed (cf extracurricula – AUSSE ~25% engage in extracurricula)

- **Curriculum** as the 'glue' and the 'organising device'

FYE approaches

(Wilson, 2009; Kift, 2009)

- **1st generation FYE**
  - Essentially co-curricula – on the curriculum's periphery

- **2nd generation FYE**
  - Curriculum focus – enhancing the student learning experience through pedagogy, curriculum design, and L&T practice

- **3rd generation FYE**
  - 1st **and** 2nd generation delivered seamlessly across the institution, its disciplines, programs & services **via** academic & professional partnerships

  = **Transition pedagogy –**

  a guiding philosophy for intentional first year curriculum design and support that carefully scaffolds and mediates the first year learning experience for contemporary heterogeneous cohorts.

  Kift & Nelson (2005)

  http://conference.herdsa.org.au/2005/pdf/refereed/paper_294.pdf

Key Questions for FY Curriculum Design

Design	Has the whole-of-program first year design been mapped? Are knowledge, skills, attitudes & academic literacies required for later years in program well articulated, integrated and sequenced?
Transition	Which groups entering this course may need particular attention during their orientation & transition to university life & procedures?
Diversity	Is there a strategy in place for identifying (& communicating to FY teachers) the diversity characteristics of this cohort?
Engagement	Are opportunities provided for students to make personal connections between their previous experiences, the program content and professional skills that are important to the discipline? Is engagement with staff and peers designed in?
Evaluation	Evidence-based approach to design and practice. Does the program / suite of FY units have affordances for 'monitoring engagement' and the support / resources available to make interventions where indicated?
Assessment	Which FY units have an appropriate assessment item scheduled in the first four weeks of semester? Assessment literacies explicated?

Common FY Curriculum Complaints

- Lack of clarity and consistency regarding expectations

- Lack of coherence, achievability and relevance

- **Assessment** and **feedback**
  - Yorke & Longden (2008): 29% said feedback not prompt
  - Krause *et al* (CSHE, 2005): only 33% found feedback helpful
  - AUSSE (2009,22): only 38.6% FYs often/ very often received prompt feedback (cf 80.4% of staff thought feedback often/ very often prompt)
  - NSS (2008): satisfaction with assessment & feedback lowest

- **Lack of preparedness** re tertiary literacies: e.g academic; information; IT; numeracy; visual; statistical; professional practices; cultural; + + + ???

- **Group work** – esp group processes

Broad curriculum learnings from this?

- Manage transition proactively through curriculum

- Attend to program/career choice uncertainty

- Take curriculum time to mediate preparedness diversity

- Use peer-to-peer

- Consider how to support staff-student interactions

- Harness and integrate support and service partnerships and resources

- Make no assumptions

- Be consistent & just-in-time (across university & its programs)

And so to….

Undergraduate Research
and
The First Year Experience

What's UG research got to do with first year?

- Positive impact on **retention** and **satisfaction** (Kuh, 2008)

- UG students engaged in research report higher **motivation** to study than other students and higher self-appraisals of **generic skills** (Willison, Peirce & Ricci, 2009)

- Clarify **career goals** (Brew, 2009) and solidify **course/career choice**

- Develop **sense of professional identity**

- Promotes **sense of belonging** to a 'community of [learners and] scholars with a focus on discovery and creation of knowledge... community - both their immediate university learning community, and the broader community' (Krause, 2006, 6, 8);

- Fundamental to how **academics and students relate**
  - AUSSE re staff-student interactions http://www.acer.edu.au/ausse/resources.html

- *'Gains sought [re FYE could] in part be addressed by wider adoption of some more explicit research-teaching linkages'*   (Land & Gordon, Vol 1, 2008, 62)

In fact, (Scots) Gordon & Land (2008, 62) say –

- Synergies between *Research-Teaching Linkages* and *FYE Enhancement Themes* have been identified in terms of attempting to achieve:

  - an emphasis on success
  - engagement (not just retention)
  - empowerment (the competency for FYs to learn effectively)
  - 'personalisation'
  - the strong influence of peers
  - students as co-creators of their own learning experience
  - a desire to be **challenged**
  - ways of overcoming isolation and boredom factors
  - promotion of research skills for later professional roles
  - a higher status for first year teaching
  - making large classes feel smaller.

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In fact, Healey & Jenkins say (2009, 9) –

The lens of undergraduate research is a powerful way to **reinvent or reinvigorate the undergraduate curriculum** because:

– the focus is on the student as a learner;

– it explicitly brings the student into the worlds of research;

– it views the student as a potential producer of knowledge;

– **it potentially values all academic and support staff;**
  - **See also (Scot) Mayes, 2008, 23 re partnerships nec to support development of 'academic literacy'**

– it may help to break down institutional firewalls between teaching and research;

– it challenges what is research.

AND… there's not (much) attention to FY

ALTC TRN Project

http://www.trnexus.edu.au/

The Teaching-Research Nexus
A guide for academics and policy-makers in higher education

Compared to disciplinary considerations of the TRN, there is less focus in the literature regarding the year level considerations of the TRN. This may be the result of an implicit assumption that year level will mitigate the extent to which university students are sufficiently advanced in their learning to experience and benefit from the TRN (*Final Report*, 2008, 28)

The Academic's and Policy-Maker's Guides to the Teaching-Research Nexus:

A suite of resources for enhancing reflective practice

http://trnexus.edu.au/uploads/presentations/ALTC%20TRN%20Final%20Report%20CG%20635.pdf

AND… there's not (much) attention to FY

- Scottish Enhancement Theme: *Research-Teaching Linkages: enhancing graduate attributes – Overview Report* (Jenkins, 2009, 27)
  http://www.enhancementthemes.ac.uk/documents/ResearchTeaching/QAA292Overview260509.pdf

- Many examples of strong emphasis on some research project in final yr

- '*What is less evident is ensuring that in year one, students are inducted and supported in developing their understanding of, and abilities in, doing research and in developing 'research mindedness' … While there is undoubtedly good practice in this area,…it needs surfacing and supporting in structured ways across institutions and disciplinary communities*'.

- Identifies links of TRN Theme to other (perhaps all) Enhancement Themes; in particular to **FYE**, Employability, and Assessment

TRN link: Scottish FY Enhancement Theme

- *Overview of First Year Enhancement Theme* (Mayes, 2008): draws links with the TRN Enhancement Theme at 3.7, 5.2, 6.5,
  http://www.enhancementthemes.ac.uk/documents/firstyear/FirstYearOverview.pdf

  – Esp re engendering scholarship in students through **explicit attention to academic writing in year one** (Alston et al, (2008) *Introducing scholarship skills: academic writing,* http://www.enhancementthemes.ac.uk/documents/firstyear/Scholarship_skills_final_report.pdf)

  The concept of 'scholarship' in academic writing extends to the ability to: appraise and select from a large volume of information; conduct primary research; select appropriate information to answer the research questions raised; and communicate the outcomes effectively. (p 4)

  Mayes recommends: **Harnessing academic literacy (which includes 'research mindedness') as the integrating FYE concept** (6.5 at 25)

And vice versa!!

Gordon & Land Vol 1, 62-63: From the TRN Theme *linking to* FYE Theme

The emphasis…of the Research-Teaching Linkages Enhancement Theme has always been that engaging students from the outset in research-type activities (**such as enquiry-based approaches to learning, critiquing research papers, generating research information, debating issues**) gives first-year students **more responsibility for, and control over**, their own learning outcomes. It is also likely to **improve their transition experience**, be it from schools or from other educational backgrounds. At a time when students are increasingly spending less time on campus it may also go some way in **connecting them more closely to their learning environment**. It may also facilitate a more intensive approach to **individual feedback** and allow students to become increasingly involved in the **creation of content** and encourage **self-directed learning.**

Gordon & Land call this….

A progressive curriculum: fostering 'research-mindedness' early

Broad implications for whole-of-program curriculum design. Healey & Jenkins (2009, 39): 'requires a set of linked structured interventions at course team, department, institutional and national levels'

What students say about early experiences

Robertson & Blackler (2006) – NZ

Considerable variation in way 'research' is experienced (at 220)

– For UG **physics** students: '*Research is something others do*'; 'just a select few people…know about [it]' (221); 'intangible' (224)

  • Steve (physics Yr 3): '*it's like it's another language really*' (221)

– '[**G**]*eography students, even in year 1, consistently recognized the importance of starting with a research question*'; linked inextricably to fieldwork (222)

– For FY **English** students: research closer to home = library

  • Bronwyn (Yr1): 'Research is about the extra effort…to complete the assignment…you only fully understand the topic if you go and do the readings and find information in the library' (223)

  • 'looking into'; 'gathering' and 'putting it together' (223)

  • Chris (FY): 'highly visible - the lecturers and tutors make a lot of reference' (224)

Disciplinary differences in student perceptions

Table 2. Variation in students' experiences of research

	Physics	Geography	English
What is research?	Breaking new ground; moving forward; exploration and discovery	Gathering information in the world; answering a question	Looking into; gathering; putting it together; focus of interest
How visible is it?	Labs and machinery (i.e. 'tools') but often 'behind closed doors'	Most visible 'in the field'	Not tangibly visible, but apparent in dialogue
Where is it located?	Out there; at a higher level	Out there; in the field	In the library; in the head
Who does it?	Lecturers	Lecturers and (increasingly over time) students	Lecturers and students

Robertson, J. & Blackler, G. (2006) Students' experiences of learning in a research environment. *Higher Education Research & Development*, 25(3), 215–229, 226.

What are the FY learnings from this?

- Must be **explicit**: equitably unpack culture for FY students
  - What's required for success in HE & the discipline – Expose implicit values, assumptions & practices around *this* discipline learning
  - Develop student understanding of disciplinary and professional communities of practice – **What is research in this discipline?**

- Important to be explicit with students about the **links to employability** and future life & learning
  - Facilitate recording of research (& skills) development: ePortfolio

- Must be facilitated by intentional **whole-of-program** curriculum design, starting with the foundations in first year
  - Integrated and incremental T, L & A approaches
  - In FY, specific attention to development of academic skills needed for research
  - Understanding discipline research methods, forms, epistemologies

Research Skill Development Framework

http://www.adelaide.edu.au/clpd/rsd/otherfiles/RSD_hbk.pdf

pp6-7

Willison, RSD Handbook (2008)

Level 1

- *Students research at the level of a **closed inquiry*** with **high degree of structure/guidance**

Level 2

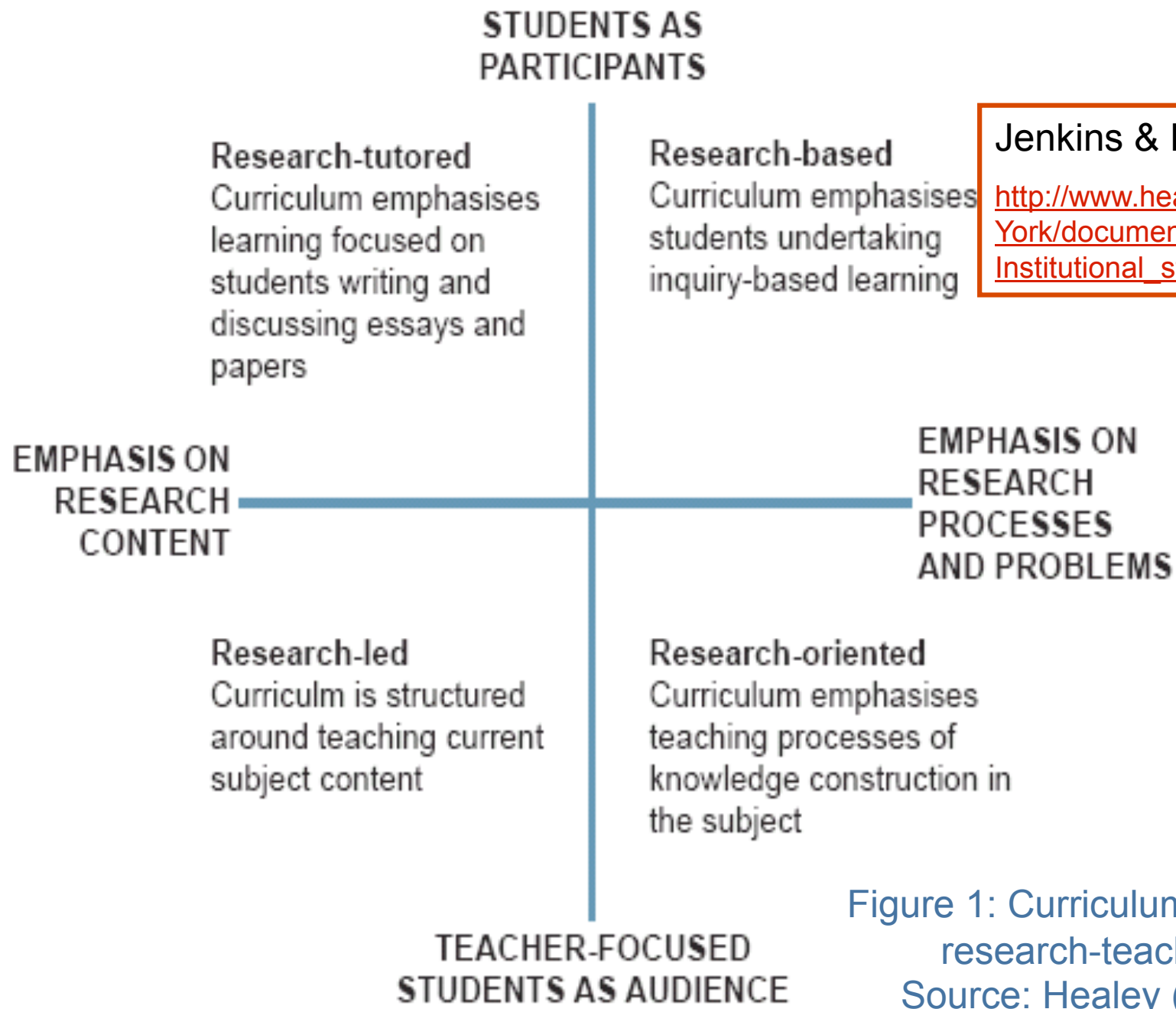- *Students research at the level of a **closed inquiry*** with **some structure/guidance**

Level 3

- *Research **independently** at the level of a **closed inquiry***

Level 4

- *Research at the level of an **open inquiry*** within **structured guidelines**

Level 5

- *Research at the level of an **open inquiry*** within **self determined guidelines**

STUDENTS AS PARTICIPANTS

Research-tutored
Curriculum emphasises learning focused on students writing and discussing essays and papers

Research-based
Curriculum emphasises students undertaking inquiry-based learning

EMPHASIS ON RESEARCH CONTENT

EMPHASIS ON RESEARCH PROCESSES AND PROBLEMS

Research-led
Curriculm is structured around teaching current subject content

Research-oriented
Curriculum emphasises teaching processes of knowledge construction in the subject

TEACHER-FOCUSED STUDENTS AS AUDIENCE

Jenkins & Healey (2005, 22)

http://www.heacademy.ac.uk/assets/York/documents/ourwork/research/Institutional_strategies.pdf

Figure 1: Curriculum design and the research-teaching nexus
Source: Healey (2005a, p.70)

Some FY Examples (1)

- ePortfolio has a role in recording the development of research-based graduate attributes and to demonstrate student employability in this regard

http://www.studenteportfolio.qut.edu.au/

QUT ePortfolio

- Purpose of the QUT Student e-Portfolio

  To enable students to record, reflect on, catalogue, retrieve and present their experiences, activities, and things they produce both inside and outside of university life as evidence of the skills developed while at QUT that contribute significantly to their lifelong learning and career development.

To record an incremental approach

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Source: http://www.trnexus.edu.au

Curriculum Design Strategies

The key to successfully integrating the TRN in a developmental sequence across the curriculum is to ensure an holistic approach to designing student learning activities and assessment in each year level. This requires an integrated approach to all aspects of the curriculum.

Through a curriculum mapping matrix (such as that shown in the table below), students' experiences of research may be traced and deliberately integrated at key points during their study program. A similar matrix may be drawn up for each course or unit of study within the broader degree program.

Table 1. Matrix to guide disciplinary-based research links, learning and teaching across year levels

	Year 1 Semester 1/2	Year 2 Semester 1/2	Year 3 Semester 1/2
Curriculum design elements			
Learning Objectives			
Learning Activities			

http://trnexus.edu.au/index.php?page=curriculum-design-strategies

Suggests that curr designers –

- Trace progressive development in scale, complexity & uncertainty of students' engagement in research projects

- Use FY to **induct** students into the role of research in their discipline & present knowledge as created, uncertain and contested

- Plan a major research project for **final year (capstone)** to help students to integrate their understanding of the role of research in their discipline.

Some FY Examples (2)

- FY Students in groups read 3 research papers & CV of a staff member & agree interview questions for him/her about the research. On basis of reading & interview, students write individual reports on a) objectives of the research; b) how it relates to their earlier studies; c) how it relates to the academic's teaching, other interests and discipline as a whole
(University College, London, UK: Healey & Jenkins, 2009, 52-3)

- Students are given a paper from which all the references have been deleted (journal name, volume, page nos, author's name). The students write an abstract for the paper.
  - Used in geography tutorials to develop the skills of writing, critical analysis, summarising information and research design and planning (Plymouth University, UK)

Some FY Examples (3)
Land and Gordon, 2008, Vol 2, 20

FY **Economics** 1A & Economics Principles and Applications

(University of Edinburgh):

- Search for and synthesise economic data.

- In groups, students investigate a country and have to pull together various economic performance indicators for their country to present findings in a poster session.

- Encouraged to gather and manipulate the data and not simply to replicate charts; eg produce their own to provide insights

- Poster session is attended by staff and PhD students who walk around the posters and ask students questions.

- Introduces FY students to key skills of doing research **and** enables them to meet staff and research-active postgrads for sense of belonging in research community.

Some FY Examples (4)

- Students on an **Environmental Studies** degree undertake local sustainability projects in research groups across Yrs 1-3, working in collaboration with Sunderland City Council's Local Agenda 21 personnel, and other local environment and development agencies. (University of Sunderland, UK: Healey & Jenkins, 2009, 60).

- *Language and Multiliteracies* (BEd, n=600) Each week a different researcher from School of Ed does lecture and draws on their own, as well as related research, that focuses on a particular aspect of literacy education (eg, changing technologies of literacies over time; the history of reading curriculum in English speaking nations; critical literacy; and literacy & identity). Typically students get an introduction to research questions and their methods, with connections back to the research topic and course readings. (Grant & Kerin, TRN at

http://trnexus.edu.au/uploads/examples%20June%203/Literacy%20Education%201.pdf

Some FY Examples (5)

FY Biology .

- FY students (n=400-900) engage in professional practices of bioscientists. Taught by practising bioscientists; linked assessments.

- **Task 1**: listen to audio interviews of scientists describing their cutting-edge research. Students respond to the interviews in short written assignments/ reflections.

- **Task 2**: attend *Biohorizons* eConference (modelling professional conference) with face-to-face plenary lecture delivered by internationally recognised researcher.

- **Task 3**: Over next 6 weeks, students register in pairs for 1 of 10 clusters based around biological themes. Supported by online tutors (PhD students), they write and upload a paper (15%) & PowerPoint presentation (10%), using databases to explore primary literature & research a specific topic of interest within broad cluster themes. Then individually post questions & answers about one another's work (5%). The eTutors mark all three submissions using online criteria sheets and audiofiles to personalise feedback.

(University of Queensland, Healey & Jenkins, 2009, 40)

Some FY Examples (6)

During orientation .

- 650 students in Faculty of Education, Humanities and Science undertook discipline-based inquiry projects during **induction week**.

- Students in small groups to collect information from the library and in the field, analyse it, present it to tutors in novel ways and receive formative feedback. EG:

  - human geographers & sociologists researched the experience of Gloucester residents of 'the Great Flood of 2007'.

  - biologists and psychologists investigated primate behaviour at Bristol Zoo.

- Other faculties now developing their own versions of undergraduate research as part of induction. Has been a significant staff development activity for **both** academic tutors involved in designing inquiry-led activities **and** library staff who changed library induction to support the specific student research projects.

  (University of Gloucestershire, UK, Healey & Jenkins, 2009, 11)

Some FY Examples

FY level examples at

http://trnexus.edu.au/index.php?page=year-level-groups

Some recommendations

- This aspect of teaching not nec well understood or supported by academics with a major focus on research (Jenkins, 2009, 6)
    - Lobby to get research funding allocated to UG research (not another thing that teachers have to design out of teaching budget)

- Increase status of FY teaching and support
    - It is in FY that the critical scaffolding of research and inquiry will need to take place **_for all students_**

- Be very intentional in scaffolding development of research skills/ academic literacies, esp in widening participation environment

- UG research has to be both **challenging and achievable** in the FY
    - Done properly it will enhance the FY student experience and will alleviate many FYE issues; assessment is key.

- Academic and professional partnerships are required to enact

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