From Research Led Teaching to Research Based Learning

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"… universities should treat learning as not yet wholly solved problems and hence always in research mode"
(Humboldt 1810, translated 1970, quoted by Elton 2005, 110)

Brief biography

- **HE Consultant and Researcher; Emeritus Professor University of Gloucestershire (UoG), UK; Visiting Professor University College London, UK; The Humboldt Distinguished Scholar in Research-Based Learning McMaster University, Canada; International Teaching Fellow, University College Cork, Ireland; Visiting Fellow University of Queensland, Australia**
- **National Teaching Fellow; Principal Fellow HE Academy; SEDA@20 Legacy Award for Disciplinary Development; International Society for Scholarship of Teaching and Learning (ISSoTL) Distinguished Service Award**
- **Economic geographer and previously Director Centre for Active Learning UoG**
- **Advisor to Canadian Federal Government 'Roundtable on Research, Teaching and Learning in post-Secondary Education' (2006)**
- **Advisor to Australian Learning and Teaching Council / Office of Learning and Teaching Projects / Fellowships on the 'Teaching-research nexus' (2006-08), 'Undergraduate research' (2009-10); 'Teaching research' (2011-13); and 'Capstone curriculum across disciplines' (2013-15); Students as Partners (2015-16)**
- **Advisor to League of European Research Universities (2009)**
- **Advisor to EU Bologna and HE Reform Experts on research-based education (2012)**
- **Research interests: linking research and teaching; scholarship of teaching; active learning; developing an inclusive curriculum; students as change agents and as partners**

Implementing research-intensive education

"At University College London, our top strategic priority for the next 20 years is to close the divide between teaching and research. We want to integrate research into every stage of an undergraduate degree, moving from research-led to research-based teaching."
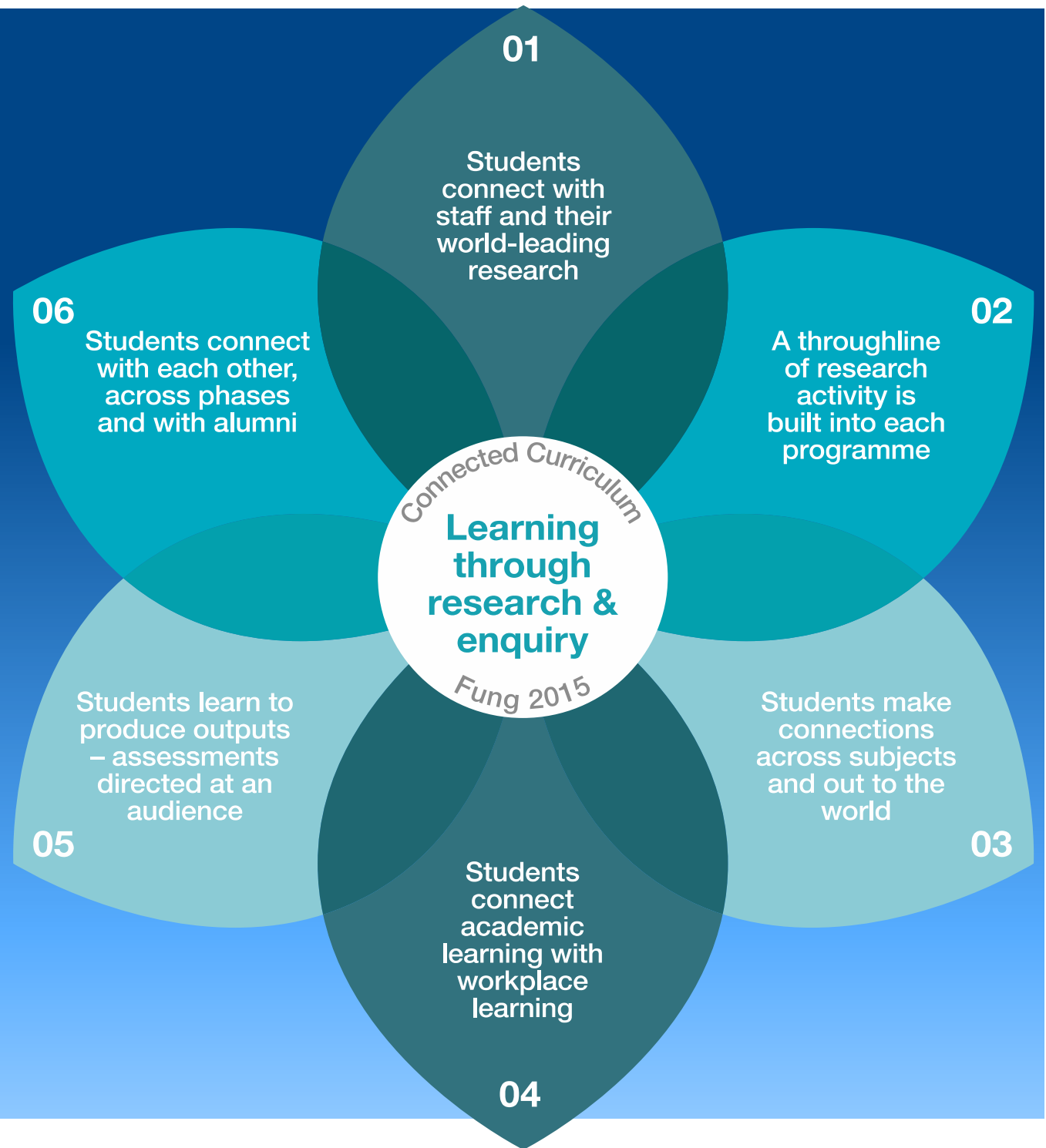
Michael Arthur, President and Provost, UCL, 30 April 2014: 22

UCL's Connected Curriculum framework

Connected Curriculum

Learning through research & enquiry

Connected Curriculum

Fung 2015

01 Students connect with staff and their world-leading research

02 A throughline of research activity is built into each programme

03 Students make connections across subjects and out to the world

04 Students connect academic learning with workplace learning

05 Students learn to produce outputs – assessments directed at an audience

06 Students connect with each other, across phases and with alumni

Linking teaching and research: Line-up

It is essential that students are aware of the research which goes on in their departments

**Strongly ----------------------------- Strongly
   agree   disagree**

Linking teaching and research: Line-up

I believe that my teaching and my research are strongly linked

Strongly agree ---------------------------------- **Strongly disagree**

Linking teaching and research: different views

- **Topic on linking research and teaching has generated much debate, some of it fairly emotive and polarised (See quotes, p1)**
- **Many people hold the view that a key characteristic of universities is where research and teaching are brought together**
- **Some claim that the best researchers are usually the best teachers (e.g. Cooke, 1998)**
- **Others dispute this claim (e.g. Jenkins, 2000); many refer to examples of excellent researchers who are poor teachers and vice versa**

Linking research and teaching: different conceptions of research

Research is oriented towards: ↓	Research aims to: ↓	The researcher is present to, or the focus of, awareness	The researcher is absent from, or incidental to, awareness
External products	Produce an outcome	Trading view	Domino view
Internal processes	Understand	Journey view	Layer view

FIG. 1. Relationships between conceptions of research.

Linking teaching and reserch: different conceptions of teaching

Information transfer / teacher focused approach

Conceptual change / student focused approach

Prosser and Trigwell (1999)

Linking teaching and research: Conceptual compatibilities

Trading view of research and information transmission approach to teaching

Journey view of research and conceptual change approach to teaching

Trowler and Wareham (2007)

Developing the teaching-research nexus

The impact of research on teaching

"Overall we have consistently found that there is a zero relationship between teaching and research at the individual academic level and at the department level."

Hattie and Marsh (2004, 7)

Developing the teaching-research nexus

The impact of teaching on research

"Students who both taught and conducted research demonstrate significantly greater improvement in their abilities to generate testable hypotheses and design valid experiments."

Feldon (2011)

Our argument: a 'research active curriculum'

"*All* undergraduate students in *all* higher education institutions should experience learning through, and about, research and inquiry. … We argue, as does much recent US experience, that such curricular experience should and can be mainstreamed for all or many students through a *research-active curriculum*. We argue that this can be achieved through structured interventions at course team, departmental, institutional and national levels" (Healey and Jenkins, 2009, 3).

Terminology

- *Student as scholar* – Miami, US
- *Research intensive education* – Amsterdam, Netherlands
- *Research based learning* – Tilburg, Netherlands
- *Research enriched learning and teaching* - Sydney
- *Student as producer* – Lincoln, UK
- Teaching Research Nexus – McGill, Canada
- *Inquiry-based learning* – McMaster, Canada
- *Active learning* – Gloucestershire, UK
- *Undergraduate research and inquiry* – Many in US
- *Research based education* – UCL, UK

Engaging students in research and inquiry

"**For the students who are the professionals of the future, developing the ability to investigate problems, make judgments on the basis of sound evidence, take decisions on a rational basis, and understand what they are doing and why is vital. Research and inquiry is not just for those who choose to pursue an academic career. It is central to professional life in the twenty-first century**."

Brew (2007, 7)

Engaging students in research and inquiry

"**Developing the Student as Scholar Model requires a fundamental shift in how we structure and imagine the whole undergraduate experience. It requires, as a minimum, the adoption of the Learning Paradigm in everything from the first introductory course through the final capstone experience. It requires a culture of inquiry-based learning infused throughout the entire liberal arts curriculum that starts with the very first day of college and is reinforced in every classroom and program.**"
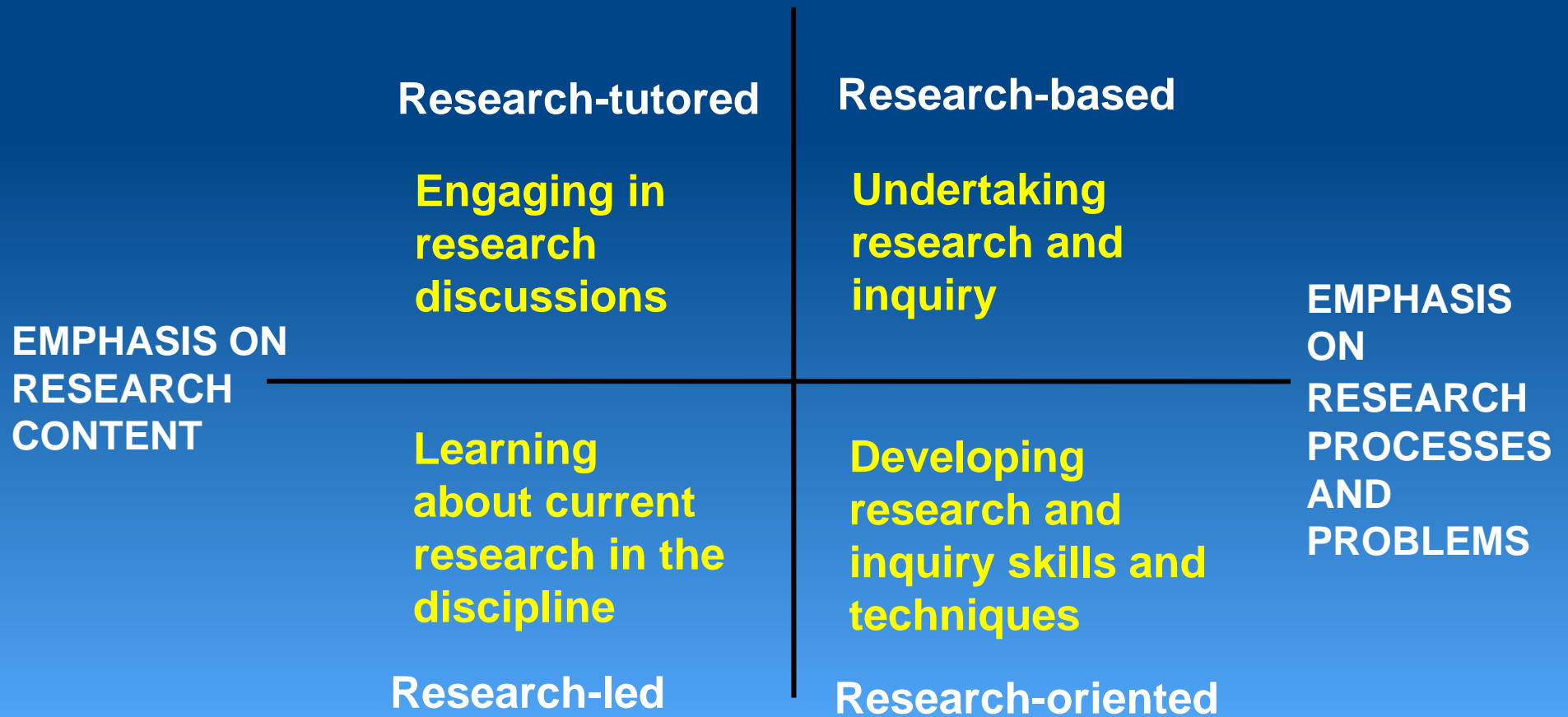
(Hodge *et al*. 2007, 1)

Engaging students in research and inquiry

1. **Different ways** of engaging students
2. Strategies for engaging students at the **beginning** of their course
3. Strategies for engaging students at the **end** of their course
4. Strategies for engaging students **throughout** their course

STUDENTS ARE PARTICIPANTS

Research-tutored

Engaging in research discussions

Research-based

Undertaking research and inquiry

EMPHASIS ON RESEARCH CONTENT

EMPHASIS ON RESEARCH PROCESSES AND PROBLEMS

Learning about current research in the discipline

Developing research and inquiry skills and techniques

Research-led

Research-oriented

STUDENTS FREQUENTLY ARE AN AUDIENCE

Curriculum design and the research-teaching nexus

(based on Healey, 2005, 70)

STUDENT-LED

**Pursuing
(information-active)**

**Authoring
(discovery-active)**

EXPLORING AND
ACQUIRING EXISTING
KNOWLEDGE

PARTICIPATING
IN BUILDING
KNOWLEDGE

**Identifying
(information-responsive)**

**Producing
(discovery-responsive)**

STAFF-LED

**Inquiry-based learning: a conceptual framework
(after Levy, 2011)**

High Impact Activities

★ **First-Year Seminars and Experiences**
★ **Common Intellectual Experiences**
★ **Learning Communities**
★ **Writing-Intensive Courses**
★ **Collaborative Assignments and Projects**
★ **"Science as Science Is Done"; Undergraduate Research**
★ **Diversity/Global Learning**
★ **Service Learning, Community-Based Learning**
★ **Internships**
★ **Capstone Courses and Projects**

Source: Kuh, 2008

Strategies for engaging students at the beginning of their courses

In pairs, each skim read at least ONE different year one case study (1.1-1.11 pp 3-8).

Discuss whether and how any of the ideas may be amended for application in your contexts.

5 minutes

Developing and enhancing undergraduate final-year projects and dissertations

A National Teaching Fellowship Scheme project publication

Mick Healey, Laura Lannin, Arran Stibbe and James Derounian
July 2013

UNIVERSITY OF GLOUCESTERSHIRE
at Cheltenham and Gloucester

The Higher Education Academy

"Our argument is that a more flexible but equally robust approach is required to the design and assessment of FYPD [final year projects and dissertations] to meet the needs of students from diverse subject areas and types of institution."
(Healey *et al.*, 2013: 10)

Strategies for engaging students in final year courses and across the whole program

In a different pair, each skim read at least **EITHER** ONE different final year and capstone case study **(2.1 – 2.9 pp 8-12).**

OR ONE different group of Departments **(3.1-3.7 pp. 13-15).**

Discuss whether and how any of the ideas may be amended for application in your contexts.

5 minutes

The developmental journey of the student

University curricula need to support student and citizen development from

"*absolute knowing* [where] students view knowledge as certain; their role is to obtain it from authorities … (to) *contextual knowing* [where] students believe that knowledge is constructed in a context based on judgement of evidence; their role is to exchange and compare perspectives, think through problems, and integrate and apply knowledge" (Baxter Magolda, 1992, 75).
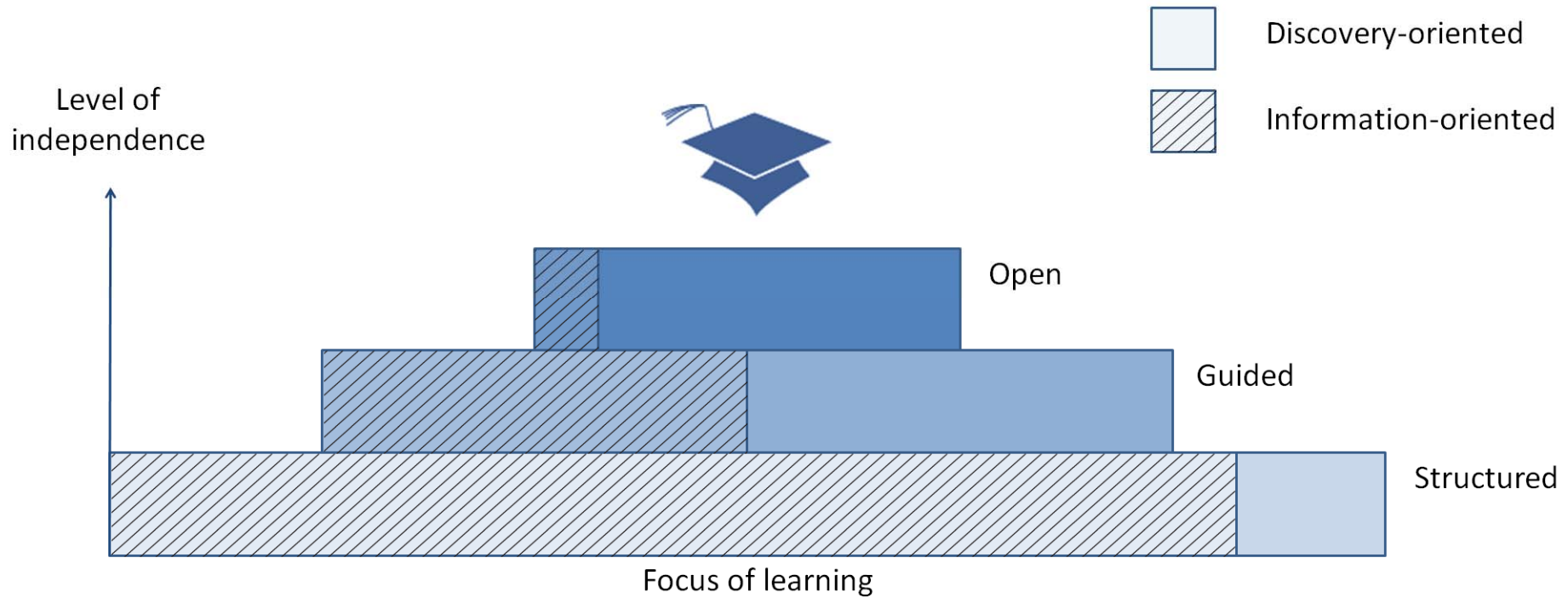
The developmental journey of the student

Developmental Level	Student traits
Reliance on external references [*Foundations*]	Knowledge viewed as certain Reliance on authorities as source of knowledge Externally defined value system and identity
At the crossroads [*Intermediate Learning*]	Evolving awareness of multiple perspectives and uncertainty Evolving awareness of own values and identity and of limitations of dependent relationships
Self-authorship [*Capstone*]	Awareness of knowledge as contextual Development of internal belief system and sense of self capacity to engage in authentic, interdependent relationships

Source: Hodge *et al.* (2008)

Modes of IBL

- Importance of scaffolding provided by lecturer and development of independence in learner
- **Structured** – where lecturers provide an issue or problem and an outline for addressing it
- **Guided** – where lecturers provide questions to stimulate inquiry but students are self-directed in terms of exploring these questions
- **Open** – where students formulate the questions themselves as well as going through the full inquiry cycle
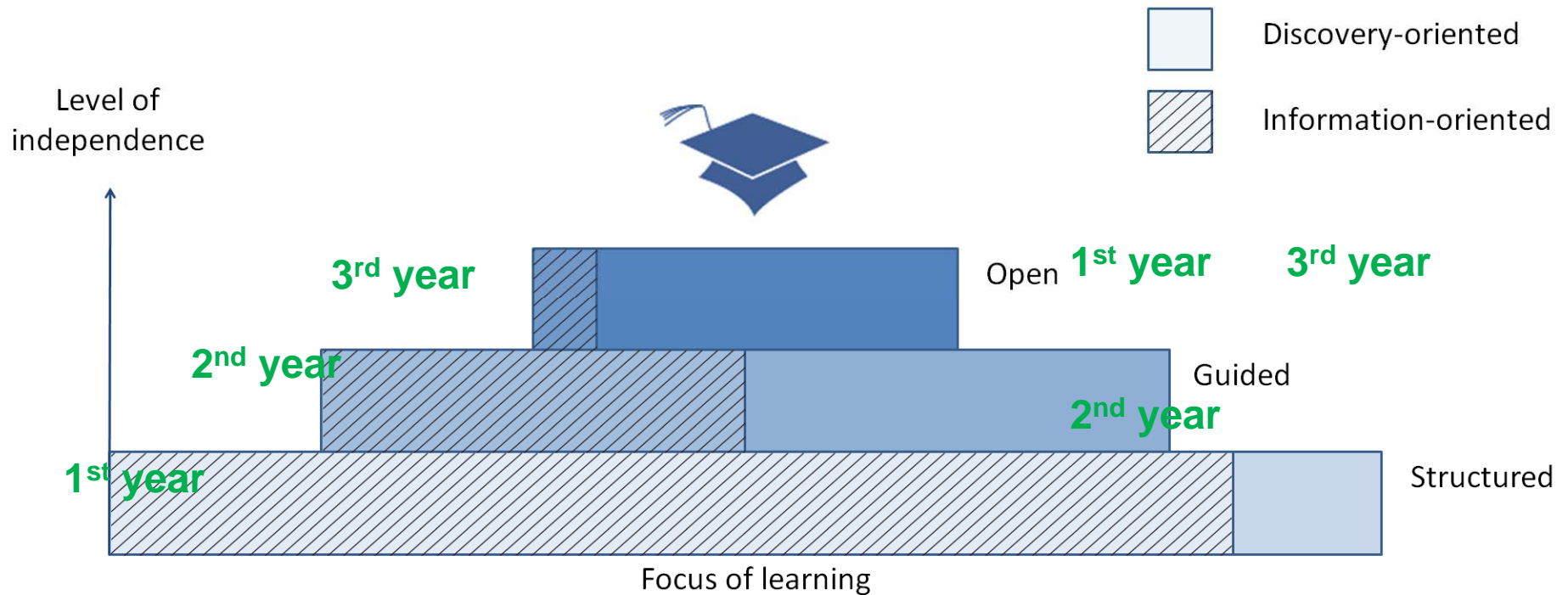
(after Staver and Bay, 1987)

Level of independence

Focus of learning

Open

Guided

Structured

Discovery-oriented

Information-oriented

Conceptual model
Darker shading = strengthening of teaching-research links AND enhanced learning outcomes
(Spronken-Smith and Walker, 2009; Spronken-Smith et al., 2009)

Scaffolding inquiry throughout a degree

From RLT to RBL

In threes and fours one of you should identify a way in which one of you propose to embed research and inquiry into your courses/programs and the others should act as critical friends.
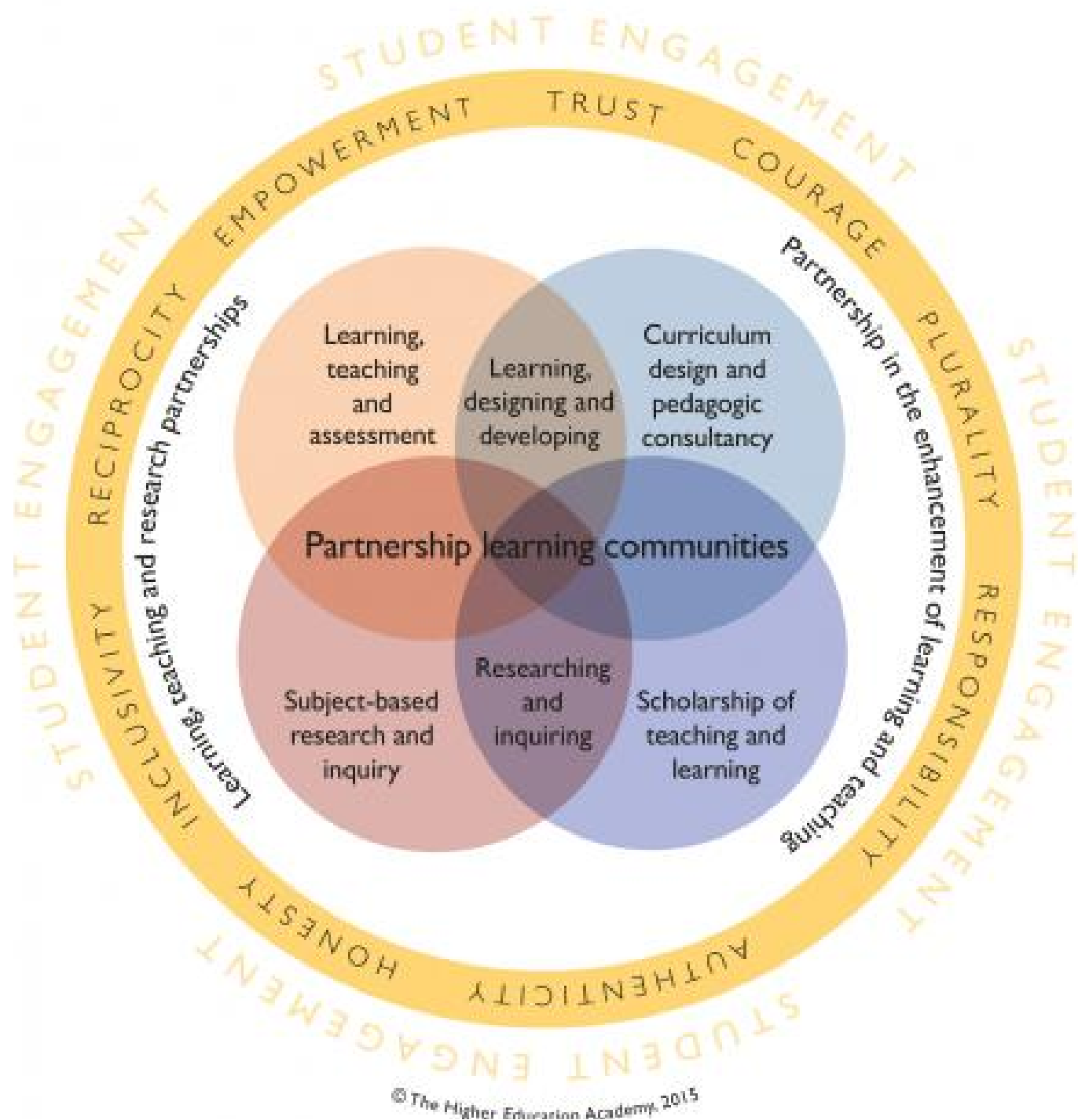
Students as partners in learning and teaching in higher education

Source: Based on Healey, Flint and Harrington (2014, 25)

International Summer Institute on
Students as Partners

MACPHERSON INSTITUTE

2nd McMaster Summer Institute: 8-11 May 2017

Where possible pairs of staff and students are invited to participate in either one or two consecutive two-day workshops OR a 3.5 day Writing Retreat

Alternatively teams of 4-6 faculty and students (at least two of each) from an institution(s) can apply to join a 3.5 day 'Change Institute'.

Facilitated by an international team of experienced staff and students from Australia, Canada, UK and US

https://macblog.mcmaster.ca/summer-institute/

International Journal for Students as Partners (*IJSaP*)

- **Research articles, case studies, opinion pieces, reflective essays and reviews**
- **International editorial team of students and staff from Australia, Canada, UK and US**

IJSaP **explores new perspectives, practices, and policies regarding how students and staff are working in partnership to enhance learning and teaching in higher education**

Connecting Higher Education:
International Perspectives on Research-based Education for the 21st Century

26-28 June 2017
University College London, Central London, United Kingdom

https://www.ucl.ac.uk/teaching-learning/connected-curriculum/conference

Abstract submission closes 10 Jan 2017

UCL + Adelaide + McMaster

Engaging students in research and inquiry: Conclusions

- **Getting students to produce knowledge rather than just consume knowledge is a way to re-link teaching and research**

- **The challenge is to mainstream undergraduate research so that all students may potentially benefit**

- **Adopting a broader definition of undergraduate research than is currently common is a way forward (Boyer *et al.*), which should benefit the learning of students in institutions with a range of different missions**

Engaging students in research and inquiry: Conclusions

If students are to be truly integrated into HE then the nature of higher education will need to be reconceptualised.

> **"universities need to move towards creating inclusive scholarly knowledge-building communities. … The notion of inclusive scholarly knowledge-building communities invites us to consider new ideas about who the scholars are in universities and how they might work in partnership."** (Brew, 2007, 4)

There is a need to do more thinking 'outside the box'