Engaging students in research and inquiry: Designing research and inquiry activities into the curriculum

Mick Healey
www.healeyheconsultants.co.uk

Brief biography

- HE Consultant and Researcher; Emeritus Professor University of Gloucestershire (UoG), UK; The Humboldt Distinguished Scholar in Research-Based Learning McMaster University, Canada; International Teaching Fellow, University College Cork, Ireland
- 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 (2015-18)
- Advisor to League of European Research Universities (2009)
- Senior Editor *International Journal for Students as Partners* (2016-)
- Research interests: linking research and teaching; scholarship of teaching and learning; active learning; students as change agents and as partners

Meg, Mollie and Sam

Participants previous experience

Which of the following statements most applies to you. See Poll (link in Chat):

1. I have *little or no* experience of engaging students in research and inquiry
2. I have experienced *several* examples of engaging students in research and inquiry
3. I have *extensive* experience of engaging students in research and inquiry


9 16:46

Engaging students in research and inquiry based learning

All **undergraduate students in *all* higher education institutions should experience learning through, and about, research and inquiry**

Strongly ---------- Strongly

agree disagree

1 2 3 4 5

Using the poll (link in Chat) where do you stand 1-5?

Engaging students in research and inquiry based learning

"*All* undergraduate students in *all* higher education institutions should experience learning through, and about, research and inquiry. … 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)

Engaging students in research and inquiry based learning

Students at the beginning of their course need to learn some research methods before they can undertake research and inquiry based learning

Strongly ---------- Strongly

agree disagree

1 2 3 4 5

Using the poll (link in Chat) where do you stand 1-5?

Designing research and inquiry learning activities

1. Mapping your research and inquiry activity
2. Modes and forms of IBL
3. Examples of IBL courses
4. Flipped classrooms, inquiry planner, and value rubric for IBL
5. Challenges in integrating research and inquiry based learning into the curriculum

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

Research-led

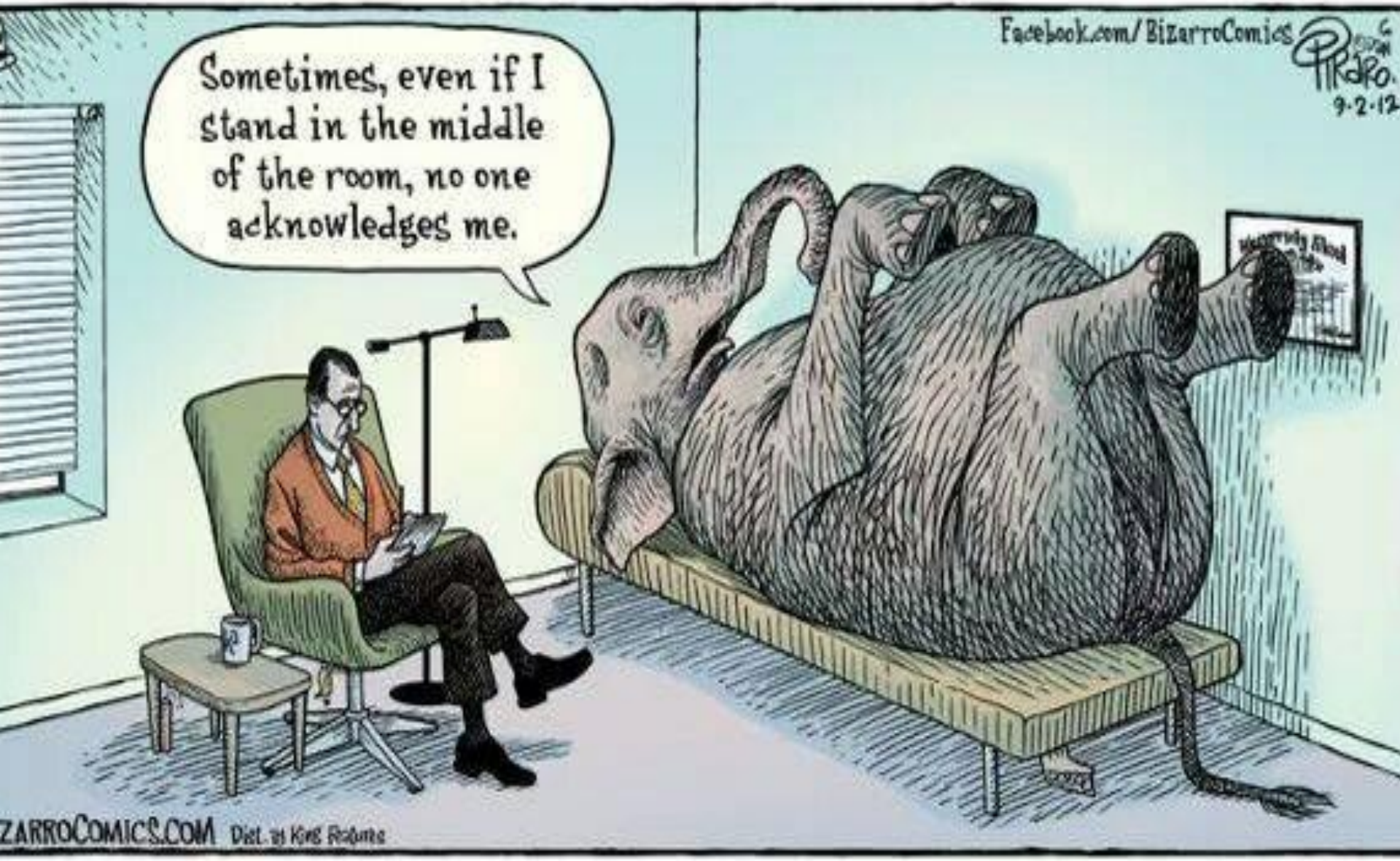
Developing research and inquiry skills and techniques

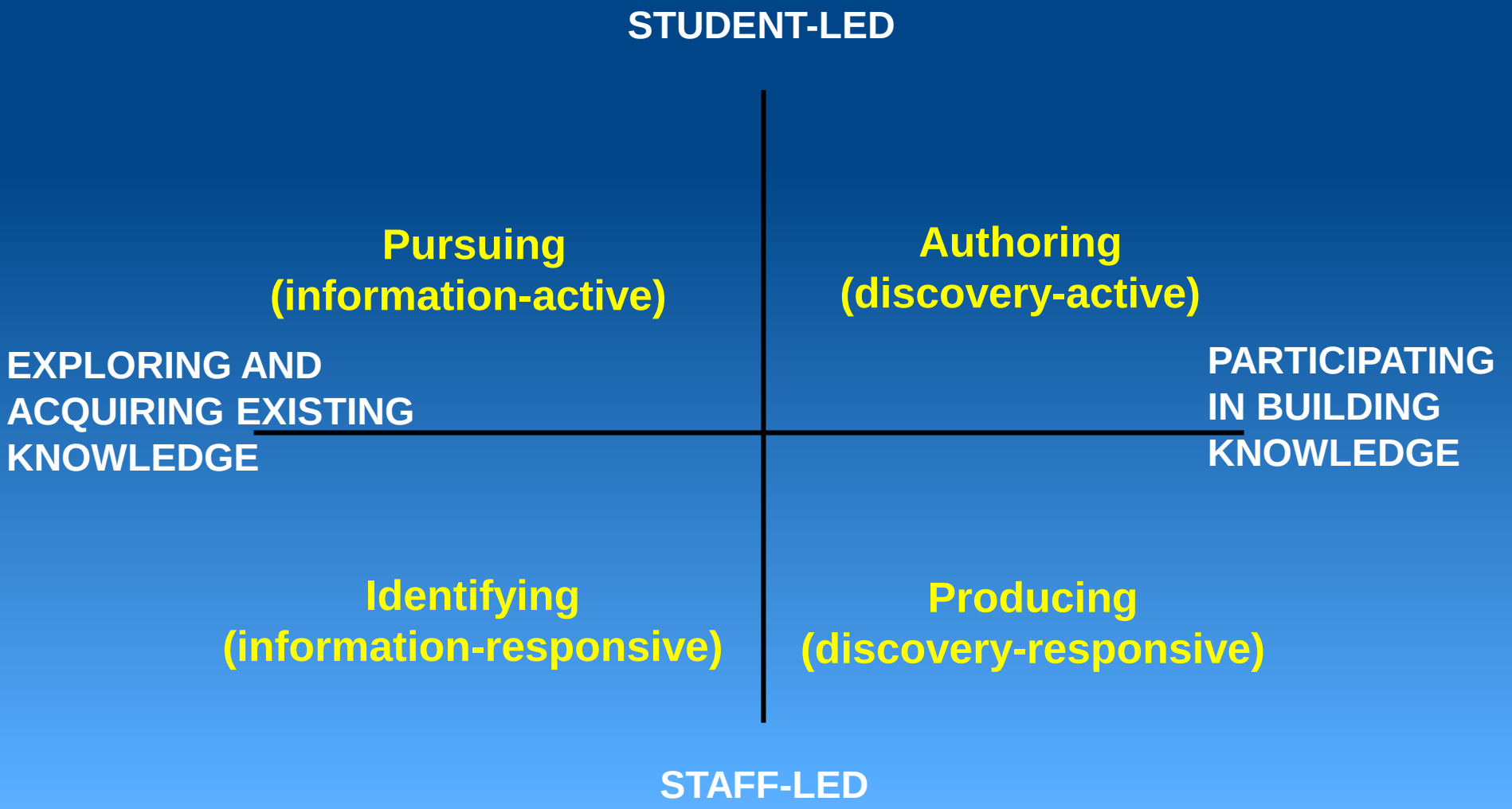
Research-oriented

STUDENTS FREQUENTLY ARE AN AUDIENCE

Curriculum design and the research-teaching nexus

(based on Healey, 2005, 70)

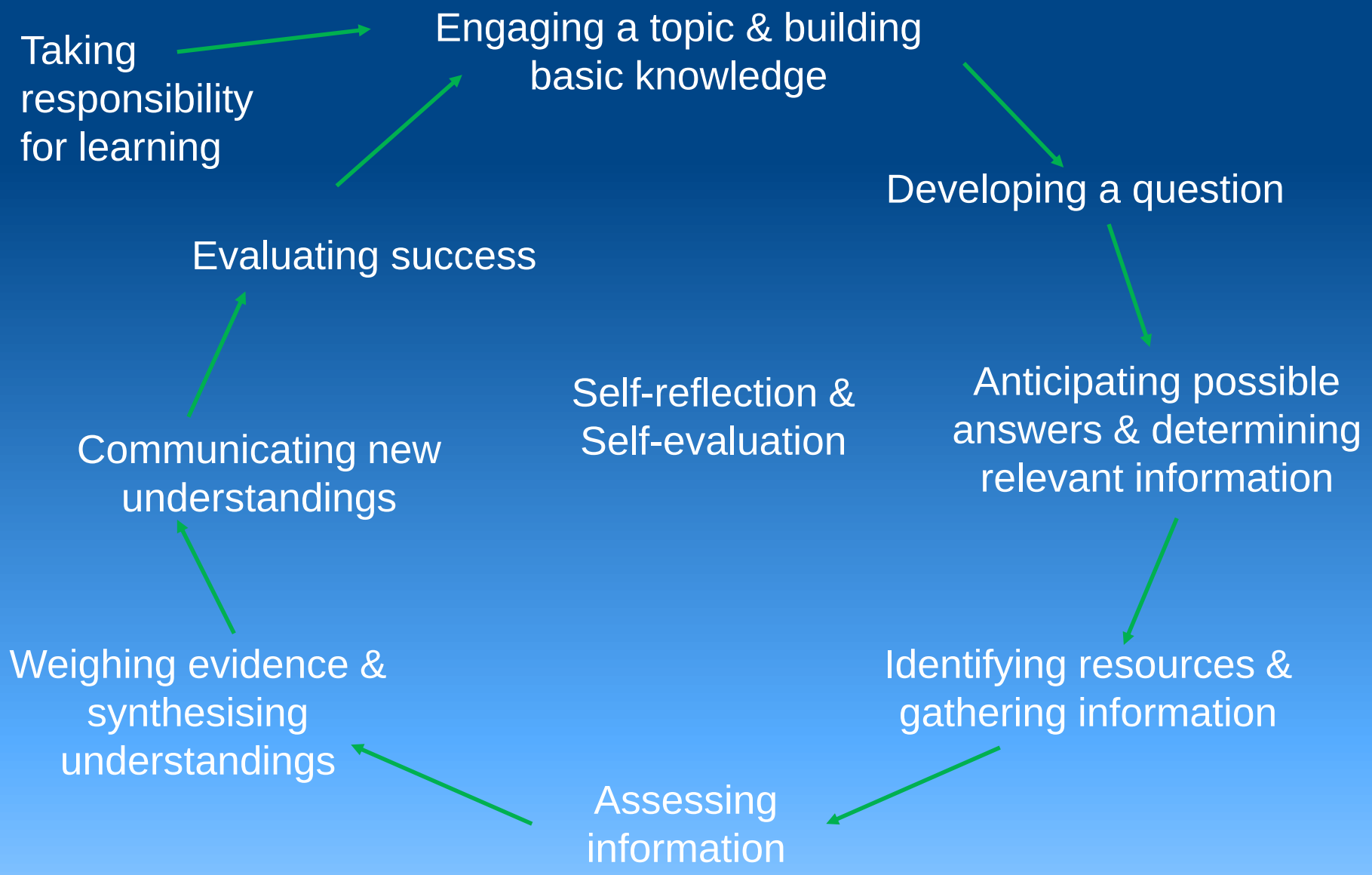

Facebook.com/BizarroComics
9-2-12
Sometimes, even if I stand in the middle of the room, no one acknowledges me.
ZARROCOMICS.COM Dist. by King Features



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

Model of the inquiry process (p14)

(Justice et al., 2007)



Forms of IBL

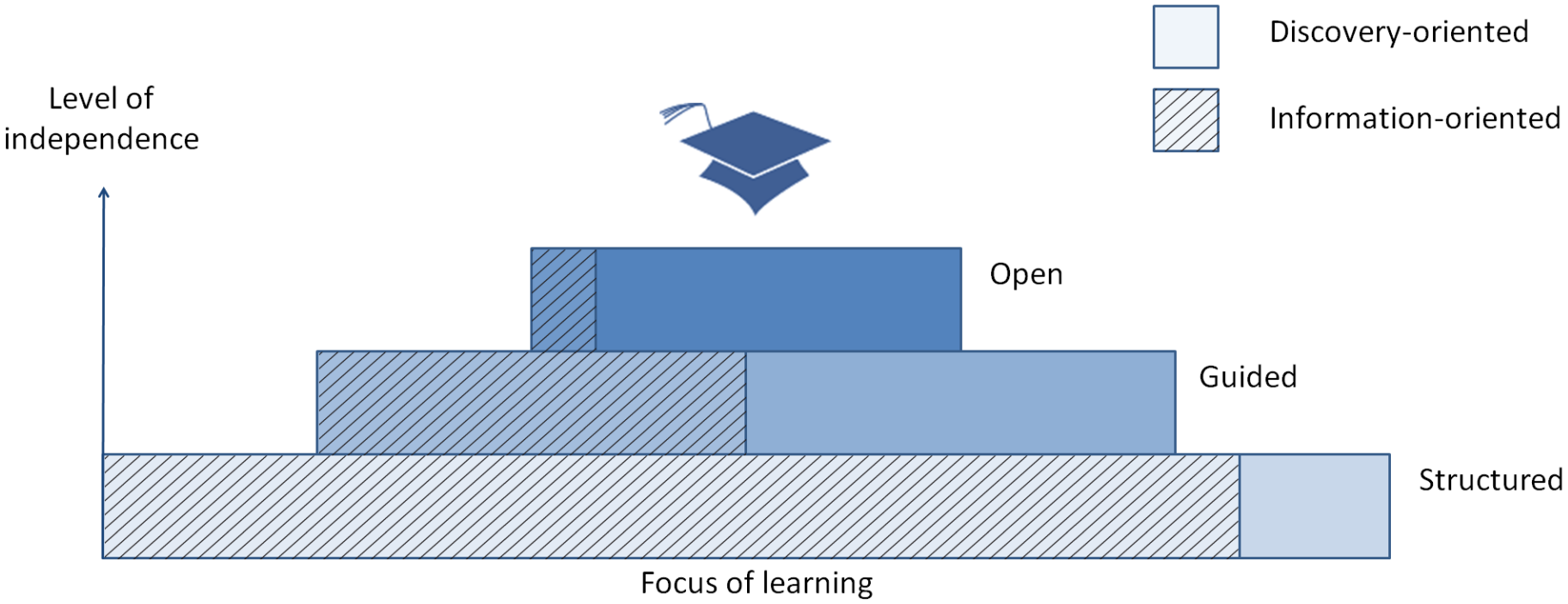
IBL activities may be designed to last over different lengths of time:

- **A short exercise in a class,**
- **A whole class**
- **A whole semester course**
- **A whole program**

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)

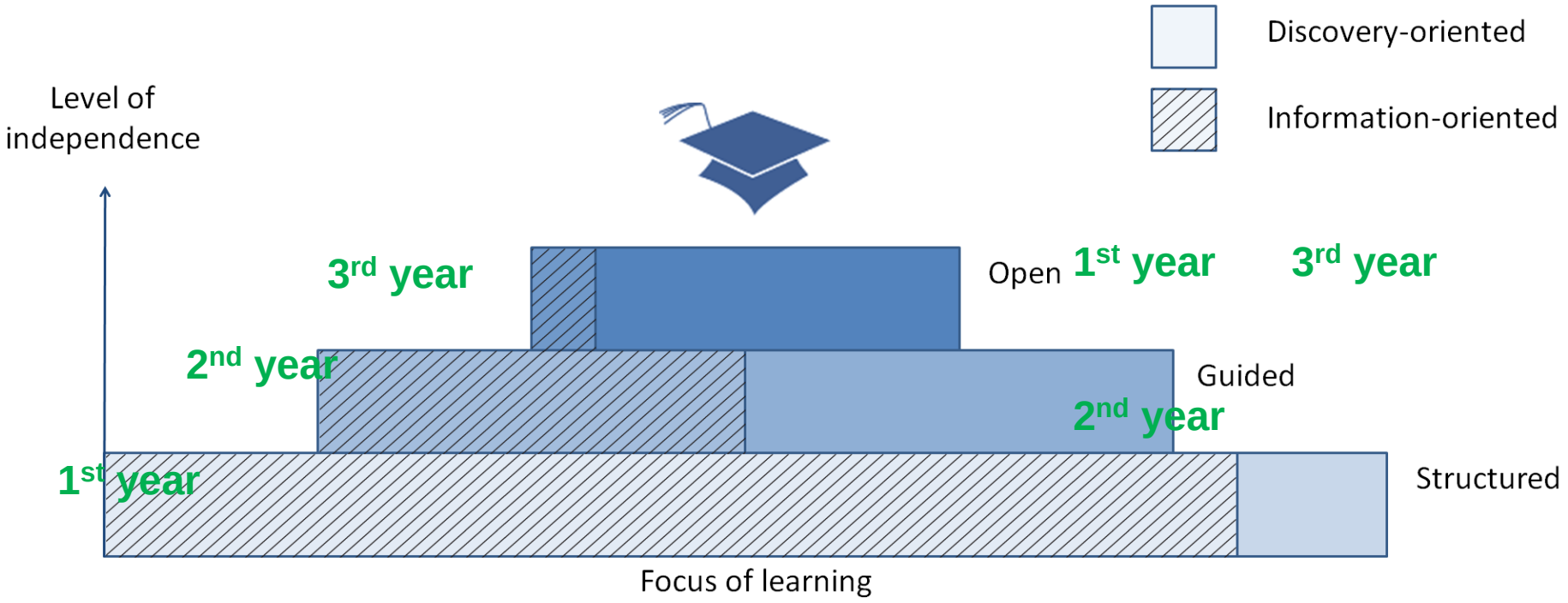


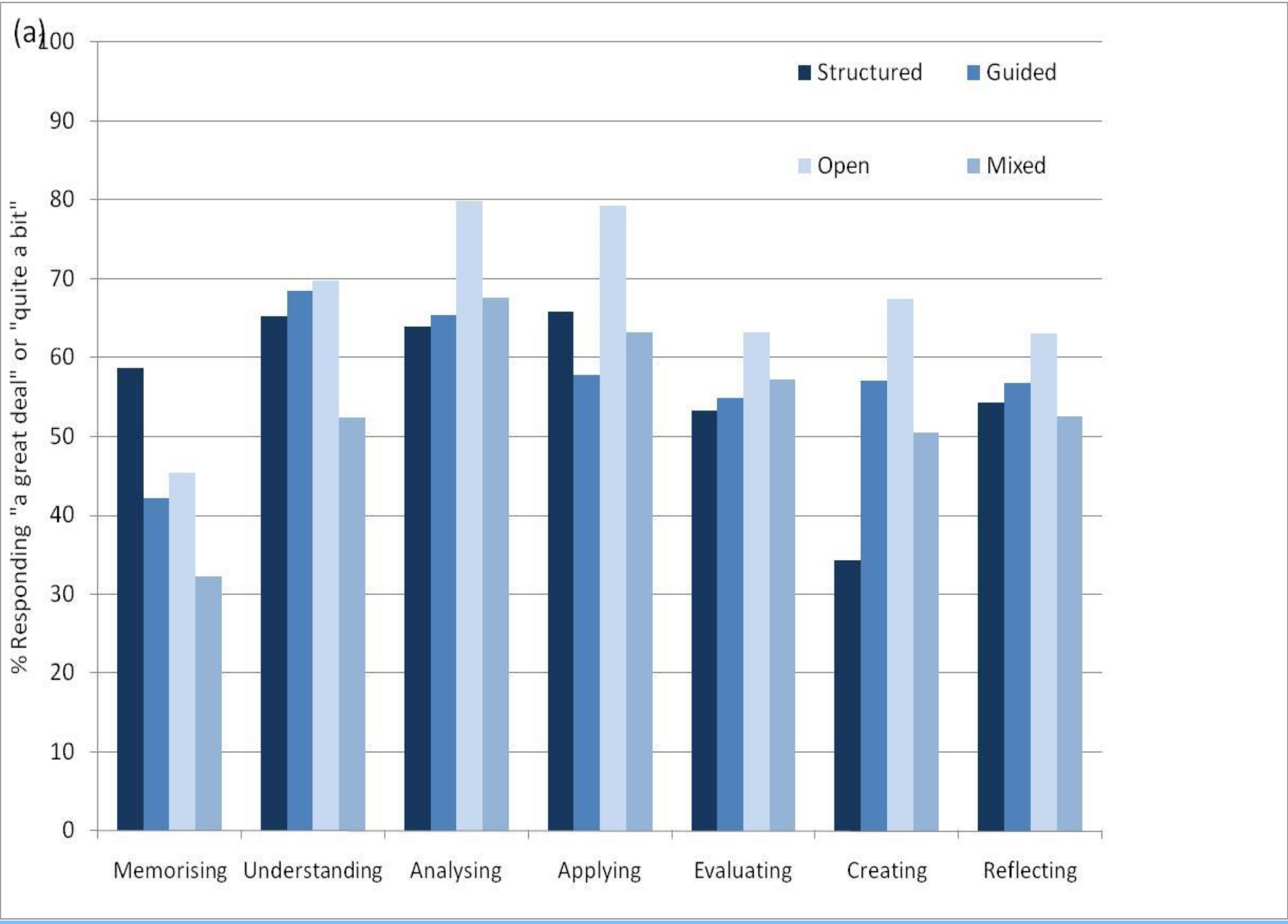
Conceptual model

Darker shading = strengthening of teaching-research links AND enhanced learning outcomes

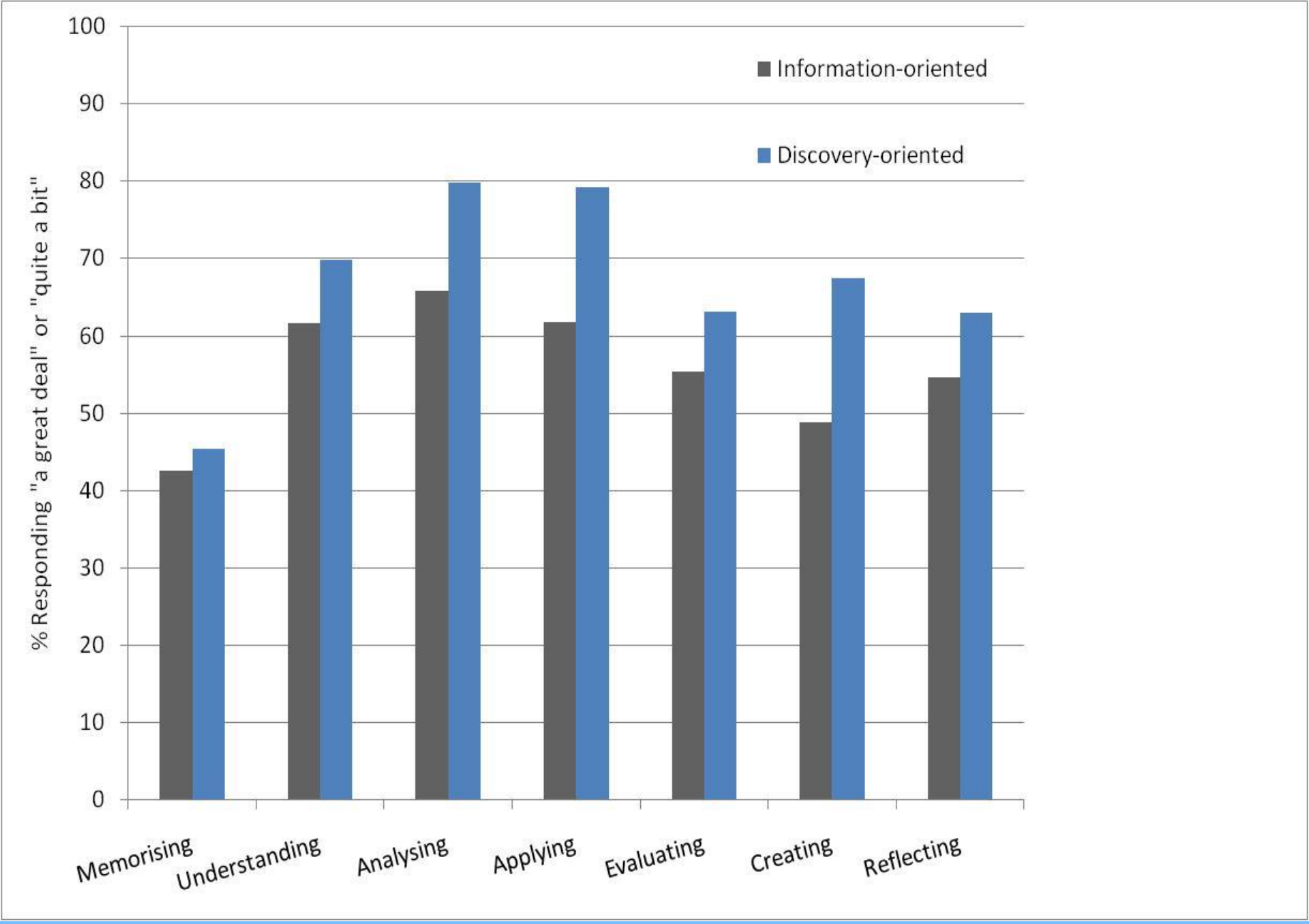
(Spronken-Smith and Walker, 2009; Spronken-Smith et al., 2009)

Scaffolding inquiry throughout a degree





(Spronken-Smith et al. 2009)



(Spronken-Smith et al. 2009)

Any questions or comments so far?

Pause to address one or two queries or comments either verbally (raise your hand) or via Zoom Chat

Examples of inquiry-based learning

You were asked to identify the similarities and differences between course outlines 1.1 (pp.2-3) and 1.2 (p.4-6).

Engaging students in research and inquiry-based learning: Course outlines

Take a few moments to write on the padlet: (link in chat room)

a) The similarities between the two examples

b) The differences between the two examples

Please do NOT repeat suggestions already listed

Mainstreaming undergraduate research and inquiry: discipline and department strategies

"Once you have learnt how to ask questions – relevant and appropriate and substantial questions – you have learnt how to learn and no one can keep you from learning whatever you want or need to know."

Postman and Weingartner (1971, 23)

Does IBL enhance student learning?

Increasing evidence that shows:

- **enhanced academic achievement, student perceptions, process skills, analytic abilities, critical thinking and creativity (Prince & Felder, 2006)**
- **deeper understanding, higher degree of reflection, more motivated and achievement of higher order learning (Berg et al., 2003)**
- **higher grades, more Honours, better retention (Justice et al. 2007b)**

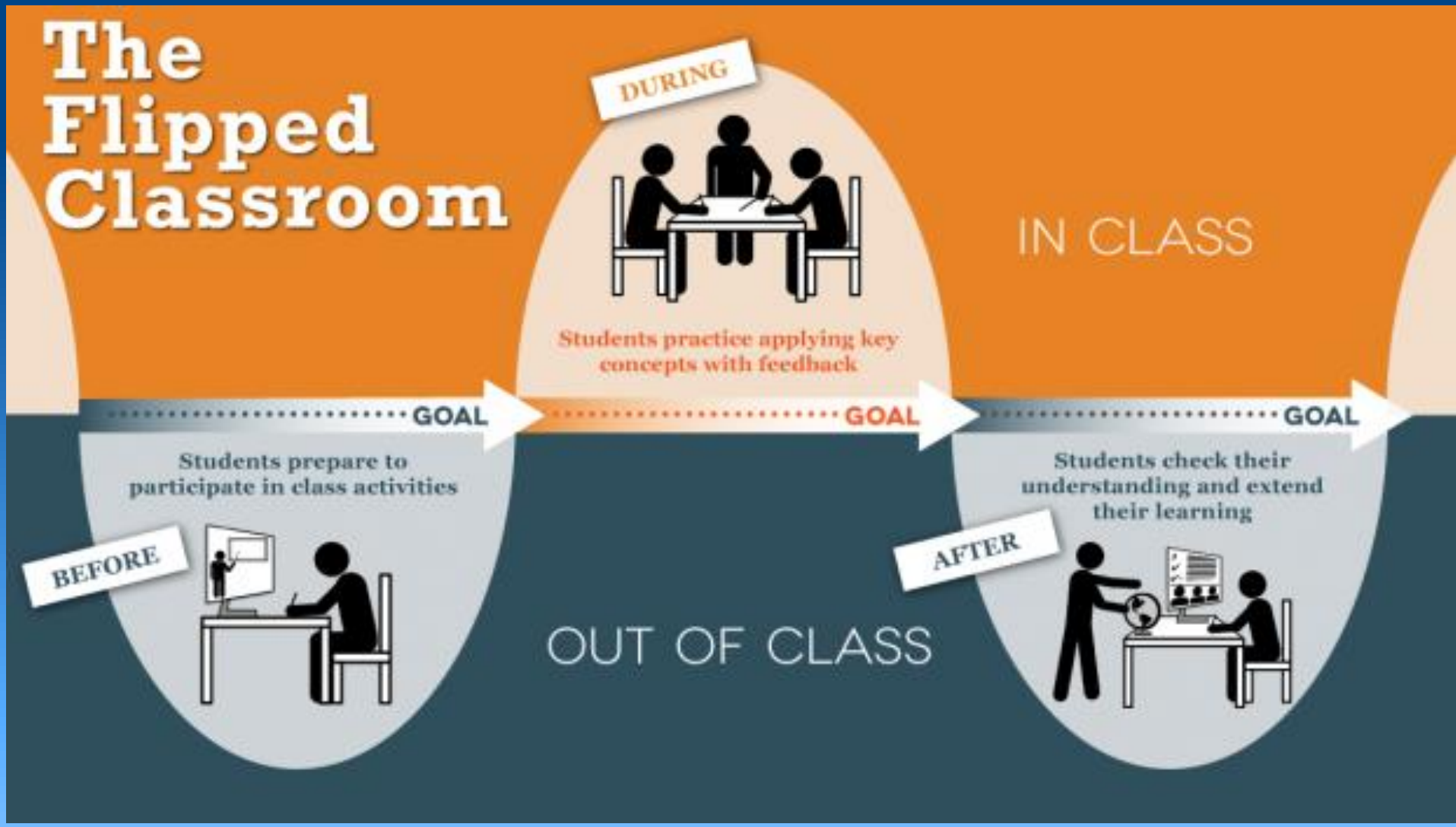
Flipped classrooms, inquiry planner, and value rubric for IBL

You were asked to look at ONE of these:

- **2. The inverse or flipped classroom** (pp.6-8)
- **3. Inquiry Planner** (pp.8-9)
- **4. Value rubric for inquiry learning** (pp.10-11)

Discuss ideas which are transferable

The inverse or flipped classroom

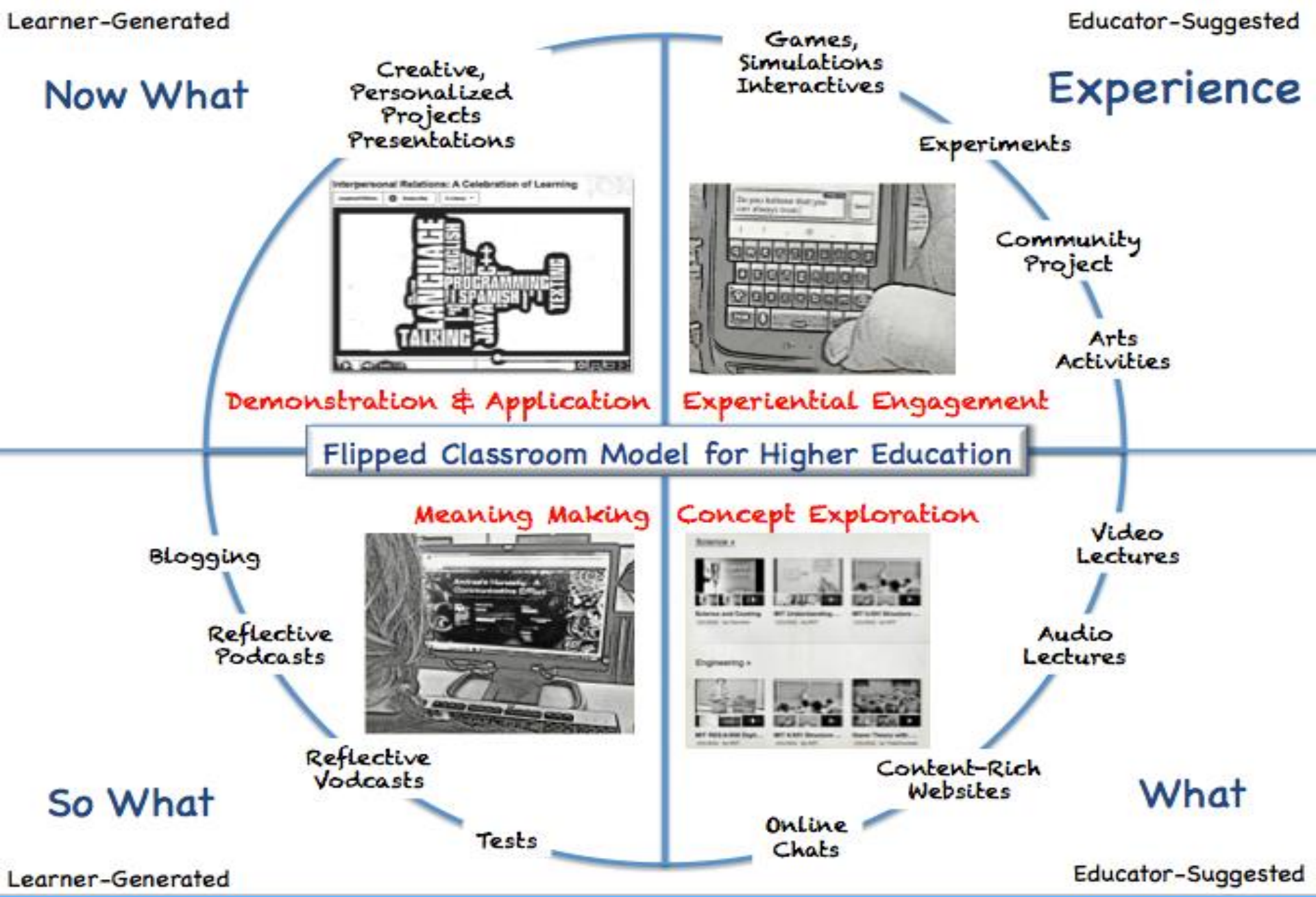


Source: http://ctl.utexas.edu/teaching/flipping_a_class/what_is_flipped

Flipped classroom

How transferable is this method to Macau?

Have any of you used the flipped classroom method? If so what was your experience?



The experiential flipped classroom model (Source: Gernstein 2012)

Inquiry planner and value rubric for IBL

How transferable are these methods to Macau?

Engaging students in research and inquiry-based learning: Challenges

Take a few moments to write on the padlet (link in chat room) the main challenges you feel you (would) face in integrating research and inquiry based learning into the curriculum.

Any questions or comments?

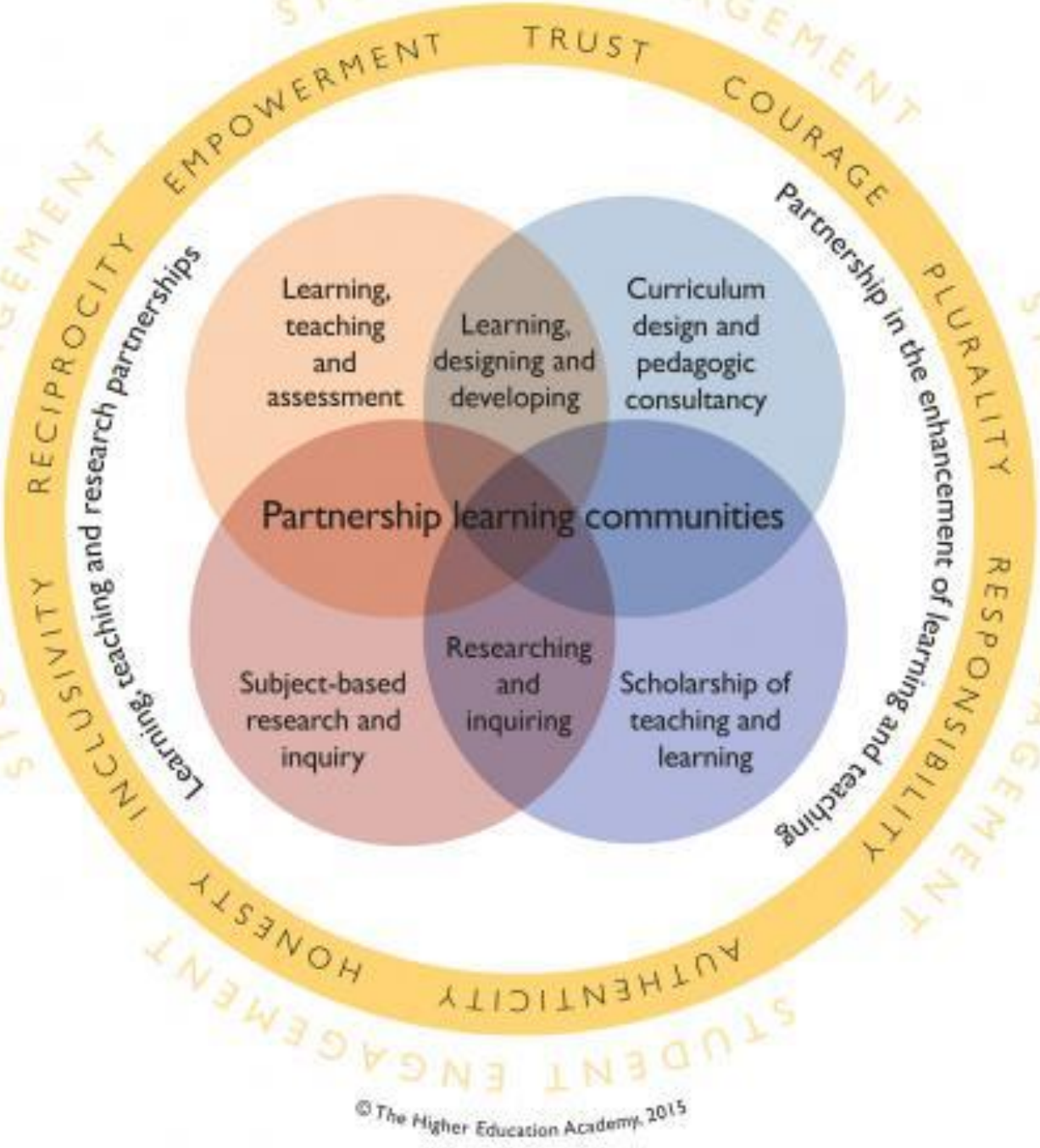
Pause to address remaining queries or comments either verbally (raise your hand) or via Zoom Chat

Engaging students in research and inquiry-based learning: Your reflections

Take a few moments to write on the padlet:
(link in chat room)

a) Your take home message from this session – the most important thing that you have learnt

b) One action point – something you plan to do as a result of today's session



Students as partners in learning and teaching in higher education

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

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'

"Never, ever, think outside the box."