



**I
S
R
P**

Researching the taught postgraduate student experience: reflections on the needs of practice

**Lindsey McEwen,
Pedagogic Research and Scholarship
Institute (PRSI), University of
Gloucestershire**

***HELM seminar, Aston University
11th February 2010***

Talk structure

- Evidence base + personal journey of travel in PedR
- Changing context to learning at PGT
- Defining M-level
- Transitions to taught postgraduate learning
- PGT student experiences of interdisciplinary learning
- Future agendas for PedR into taught postgraduate learning? Links to practice





Evidence base 1

- Two GEES Subject Centre small grants (2001 and 2003)

Real world' experiences? Reflections of current and past students on practitioner inputs to environmental taught Masters courses. small grant - with Martin Haigh (Brookes) and Steve Smith (Coventry)

The 'postgraduateness' of vocational taught Masters environmental courses: evaluating stakeholder perspectives (GEES Subject Centre small grant - with Martin Haigh (Brookes), Steve Smith (Coventry), Rob Duck (Dundee) and Liz Wolfenden (Farnborough)



EVIDENCE

Evidence base 2

- *Transitions to Taught Postgraduate Learning across University of Gloucestershire - a pilot*

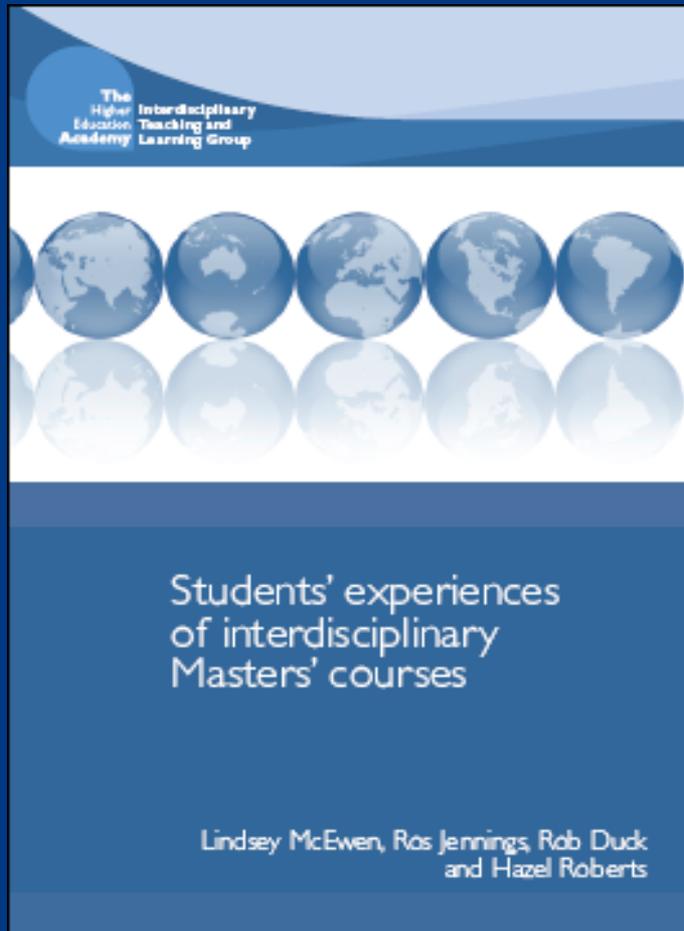
(2005 - Centre for Active Learning, CeAL, University of Gloucestershire - with Martin Jenkins and Russell Goodwin)



Evidence base 3

- International Network for Teaching and Learning in Geography in HE conference (2006-) – journal paper on *Strength in Diversity: enhancing learning in vocationally-orientated Master's courses*
Jan Monk (Arizona), Iain Hay (Flinders), Pauline Kneale (Leeds) and Helen King (Plymouth)
- Environmental Master's Developments; external review of PGT

Evidence base 4



- Higher Education Academy project (2007-) *Students' experiences of interdisciplinary Masters' courses* (Lindsey McEwen*, Ros Jennings*, Rob Duck+ and Hazel Roberts*;
*University of Gloucestershire and +University of Dundee)

Backdrop: changing face of PGT in the UK (and developed world)

academic research-oriented 'extension' or 'subject continuous study' taught Master's award, primarily for home-grown students with the strongest undergraduate degrees



- expansion of vocationally-orientated degree programmes beyond traditional research-orientated focus, continued professional development from workplace and WBL
- internationalisation of curriculum and increasing recruitment of international students
- need to respond to policies for widening access and participation in a more 'inclusive' higher education.



**increased diversity of postgraduate
taught cohorts**

Defining the nature of the postgraduate 'bar'

- Master's level ('M-level'): knowledge and skills - level descriptors (SEEC, NICATS, Bologna etc.); emphasis on skill development
- Importance of affective/attitudinal domains and personal skills (see Fink, 2003)
- 'creative professionalism' (Kennedy, 2002) - enhanced personal skills
- distinctive approach to learning activities
- distinctive socialisation of postgraduates

Postgraduateness....?

- steep learning curve
- skill rather than knowledge focused
- more self-reliance, self-direction and autonomy in learning
- originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level
- more critical evaluation and self-reflection
- a flatter relationship between student and staff
- students as research producers to a scale not normally seen in undergraduate courses

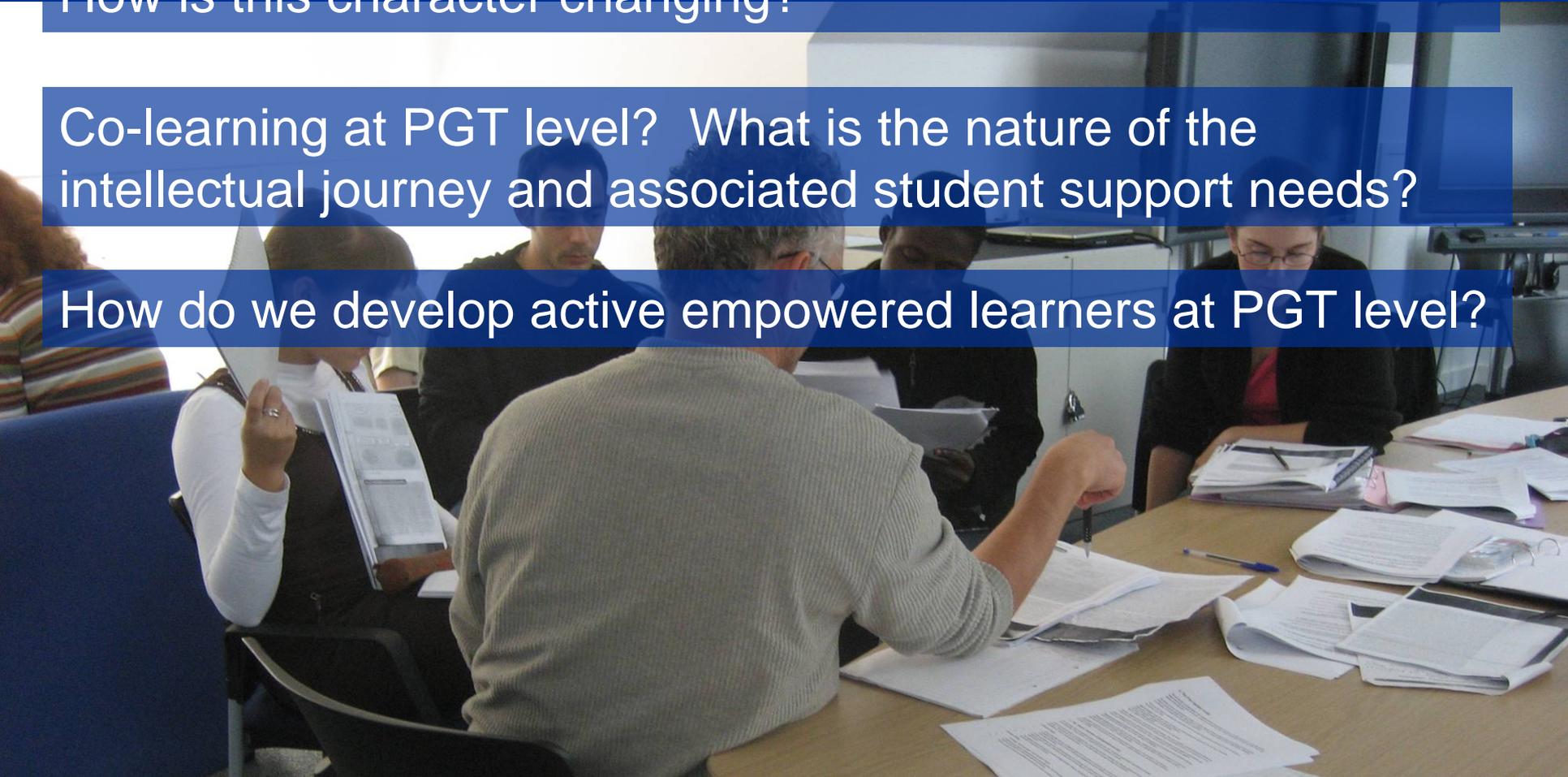


Questions.....

What is the character of taught postgraduate (PGT) cohorts?
How is this character changing?

Co-learning at PGT level? What is the nature of the
intellectual journey and associated student support needs?

How do we develop active empowered learners at PGT level?





Transitions to PGT



Diversity of the student body in PGT:

- personal characteristics (e.g. age, gender, race, culture, linguistic skills, disability);
- personal commitments (part-time/ full-time; with dependants);
- vocational experience (career stage, workplace and professional development aspirations); and
- nature and extent of prior academic experience (including discipline background, learning style etc).

Dimensions of PGT student diversity in geography

(source: McEwen *et al.*, 2008)

- of student body
- of institutional contexts experienced
- of programme styles experienced
- of discipline area(s) experienced
- of teaching models experienced
- of teaching methods experienced
- of previous or parallel work experience



International students: prior learning experiences

- Very diverse group in terms of prior learning experiences
- For some groups - teaching methods experienced mainly lectures
- Different levels of prescription with the undergraduate curriculum
- Variable experience of research-informed teaching
- Variable IT skills/ e-literacy



'Research in Spain is done in a completely different way. I never learnt how to look for articles or journals. I didn't know how to reference properly either until I started my studies in the UK.' (student - MSc Environmental Policy and Management)

Learning approaches – international students

*The Government produces the text what is needed for the students. So it's not like independent text.
(Indian student - PGT)*

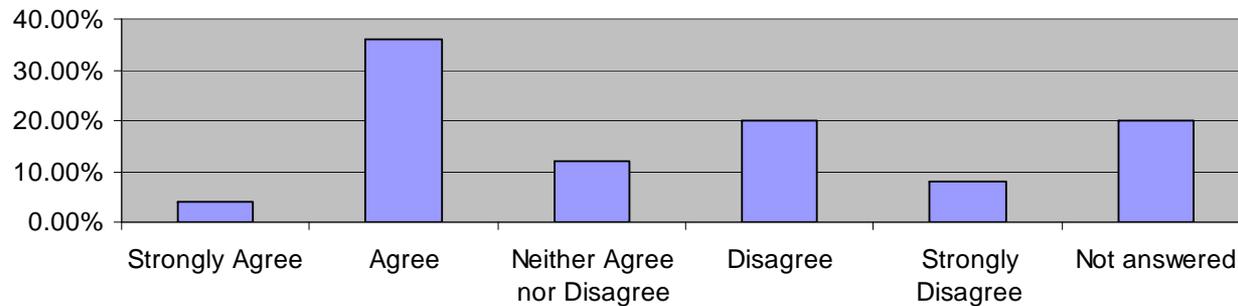
It's not easy to get textbooks back home so sometimes the lecturer had to photocopy texts that he had and sometimes he made handouts which he'd give out to us. (Nigerian student - PGT)

'Transitions' or 'divides'? Range of continua

Category	Some examples of continua		
Disciplinary focus	old disciplinary	→→→→→→	new disciplinary
	disciplinary	→→→→→→	interdisciplinary
Learning style	undergraduate learning style	→→→→→→	postgraduate learning style
	personal learning style	→→→→→→	postgraduate learning style
Teaching and learning methods	individual	→→→→→→	group (co-learning)
	passive	→→→→→→	active
Personal and cultural constructions of 'research'	no research experience	→→→→→→	significant experience of research-informed learning
Vocational experience	generic	→→→→→→	specialist
Communication technology skills	novice	→→→→→→	specialist
Transferable skill development	no experience of presenting	→→→→→→	significant experience of presenting
Personal skill development	limited confidence	→→→→→→	very confident
Educational culture	no experience of studying in UK education	→→→→→→	significant experience of studying in UK education
Socialisation for learning	no experience of working with peers from diverse backgrounds	→→→→→→	experience of working with peers from diverse backgrounds
Tutor learning relationships	hierarchical	→→→→→→	flat

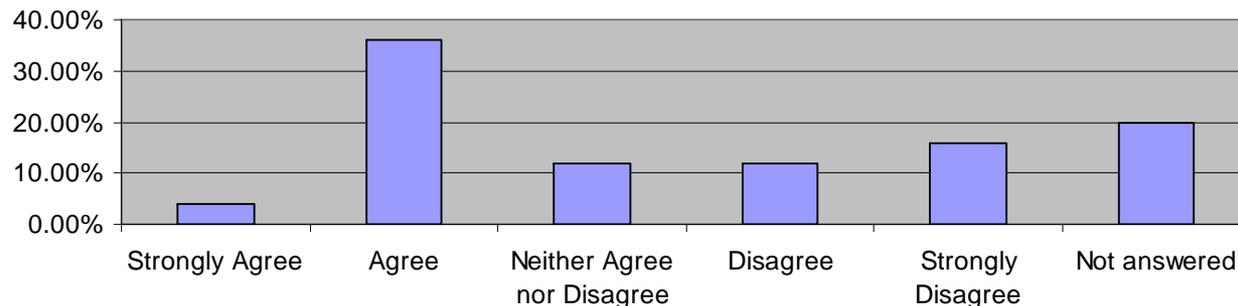
Experience of research-informed teaching (CEAL project UoG students)

I have previous experience of learning through tutor's research and the research of others in my undergraduate course

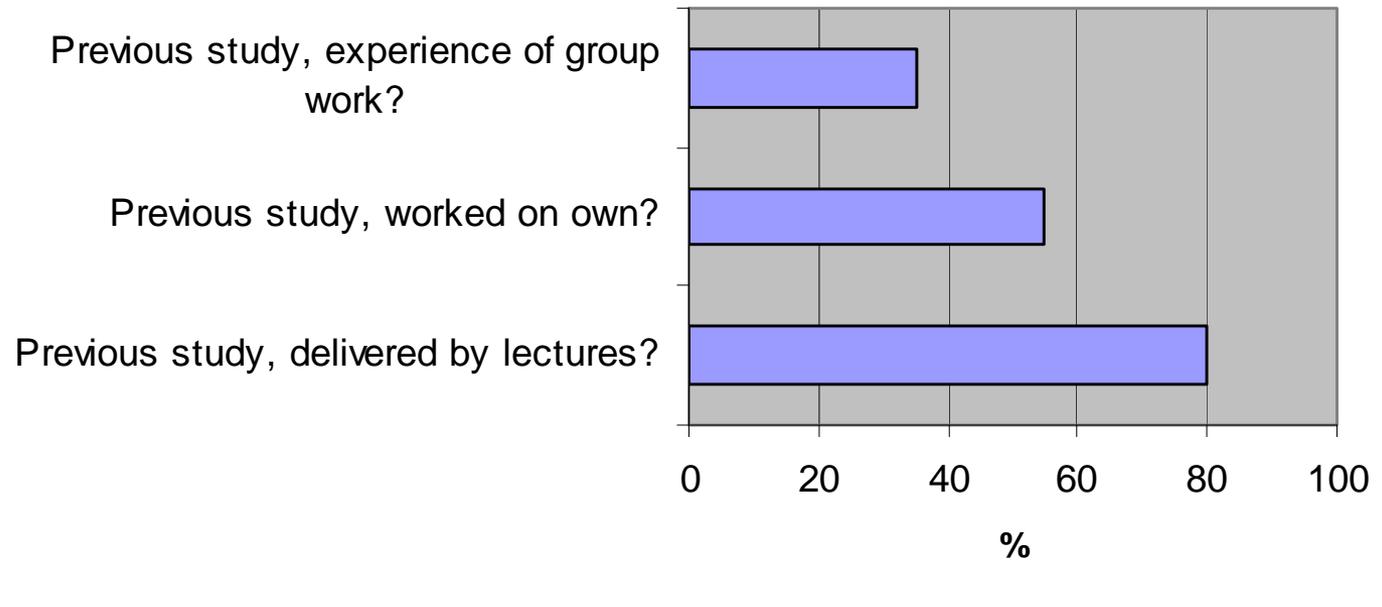


Only around 40% students had experience of using the research of others or enquiry-based learning

I have previous experience of developing knowledge and researcher skills by enquiry-based learning in my undergraduate studies



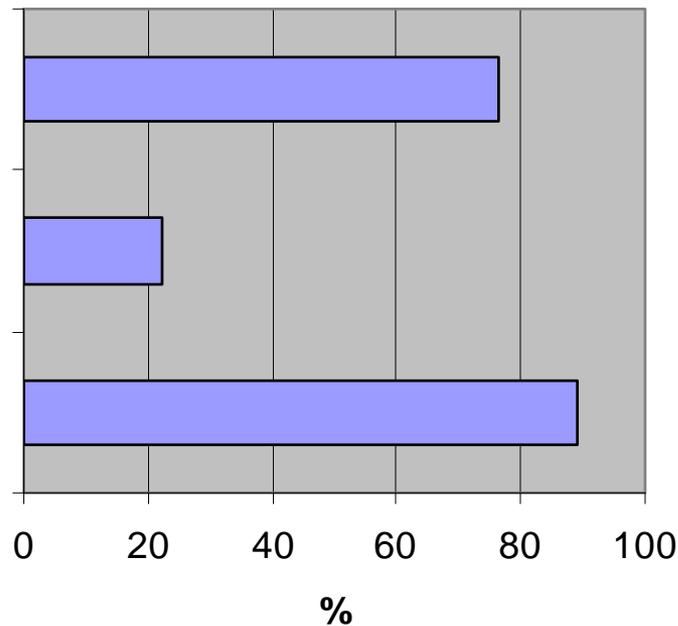
Previous learning methods



Confident with making presentations using computer software as a tool?

Confident contributing to on-line discussion boards?

Confident using learning technology for carrying out on-line literature searches?



Previous information communication technology skills



Perceptions of interdisciplinary learning (HE Academy project)

I
S
P
R

Defining the terms

<i>Term</i>	<i>Definition</i>	<i>Source</i>
Interdisciplinary approach	Involves the use of an innovative conceptual framework to synthesise and modify two or more disciplinary approaches to deal with a research problem	Graybill <i>et al.</i> (2006)
Interdisciplinary learning	'is characterized by the integration of multidisciplinary knowledge across a central program theme or focus'	Ivanitskaya <i>et al.</i> (2002) p95.
Multidisciplinary approach	Involves researchers from two or more disciplines working collaboratively on a common problem, without modifying disciplinary approaches or developing synthetic conceptual frameworks	Graybill <i>et al.</i> (2006)
Transdisciplinary approach	Involves non-academic practitioners working with academics to identify, research and develop solutions to real worlds problems	Graybill <i>et al.</i> (2006) Tress <i>et al.</i> (2003)

Learning outcomes associated with interdisciplinary learning (source: Ivanitskaya *et al.*, 2002)

<i>Author</i>	<i>Outcome</i>
Ackerman (1989)	<ul style="list-style-type: none">• Flexible thinking• Ability to generate analogies and metaphors• Understanding of the strengths and limitations of disciplines• Ability to assess value to knowledge gained
Ackerman & Perkins (1989)	<ul style="list-style-type: none">• Enhanced thinking and learning skills• Improved higher-order cognitive skills• Improved content retention• Capacity for proactive and autonomous thinking skills• Ability to devise connections between seemingly dissimilar contexts
Field, Lee, & Field (1994)	<ul style="list-style-type: none">• Ability to tolerate ambiguity or paradox• Sensitivity to the ethical dimensions of issues• Enlarged perspectives and horizons• Ability to synthesize or integrate• Enhanced creativity, original insights or unconventional thinking• Enhanced critical thinking• Capacity to perceive a balance between subjective and objective thinking• Humility, sensitivity to bias, and empowerment• Ability to demythologize experts

Common obstacles for staff/students engaged in process of ID teaching and learning (Brewer, 1999, *The challenges of interdisciplinarity* p335):

- Different cultures and frames of reference
- Different methods and operational objectives within and between the disciplines
- Different 'languages' within the disciplines and between the disciplines and the world at large
- Personal challenges related to gaining the trust and respect of others working in different disciplines and fields

Different types of interdisciplinary PGT courses

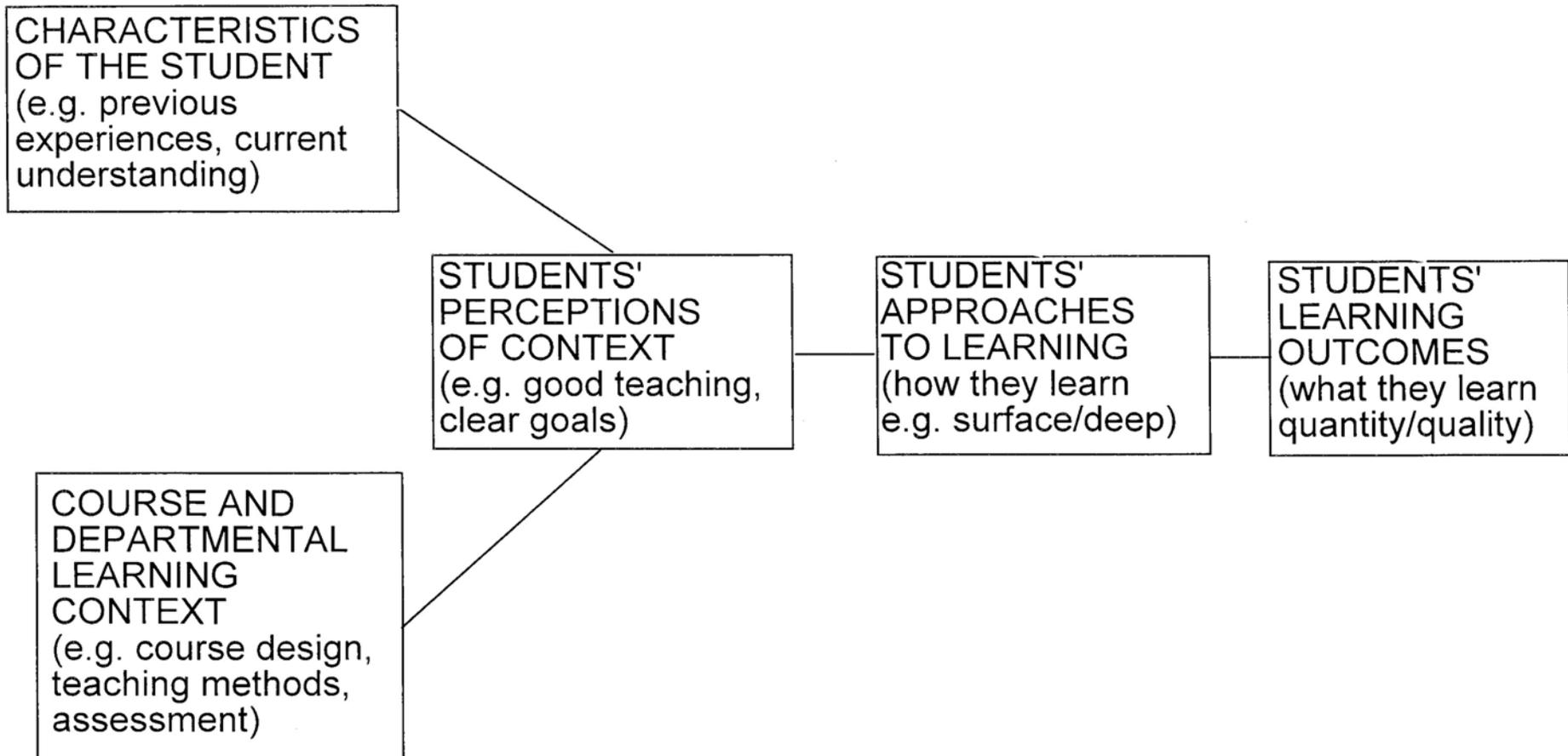
- Academic/ research focus
- Research methods courses
- Applied courses (with vocational elements; WBL/WPL)
- Interprofessional courses (e.g. Health area)
- Courses with a sustainable development (SD) core or focus
- Specialist skills courses (e.g. GIS, remote sensing)

Research methodology

- Drew on methods developed to evaluate the undergraduate student learning experience (e.g. Entwistle, 2003 ESRC ELT *Experiences of Learning and teaching* project; experiences of PGR students, University of Bristol)
- Extended student questionnaire survey delivered electronically in Questionmark (96 questions – mixture of open and closed questions) – 32 responses
- Four student focus groups – Dundee University and University of Gloucestershire
- Five tutor surveys (not reported here)
- Responses subdivided between Master's courses with a sustainable development (SD) focus and other interdisciplinary courses

Structure of the social survey

Overview of the student learning perspective – model of student learning *Source: Prosser et al., (1994)*



Students on courses

Course	Disciplinary groupings
MSc in Tourism and Sustainable Development (UoG)	Environment, Tourism, Geography
MSc Environmental Policy and Management (UoG)	Environmental science, Policy, Business
MA Film and Media (UoG)	Film, Media, Audience studies
MA Research Methods (UoG)	Range of discipline areas
MSc Environmental Change Management (Dundee)	Biology, Environmental sciences, Law, Business
MSc Remote Sensing (Dundee)	Electronic engineering, Physics, Geography, Computing
MSc Globalisation: Origins, Development and Contemporary Impact (Dundee)	Economics, Politics, Business, History, English

Themes addressed in questionnaire survey

Theme 1: Student expectations of interdisciplinary learning

Previous learning experience

Learning styles in previous undergraduate degree

Transition to present learning experience

Theme 2: Perceptions of the teaching-learning environment at taught postgraduate level

Student general perceptions of their postgraduate course

Experiences of teaching and learning

Theme 3: Approaches to learning and studying in an interdisciplinary context.

Knowledge/ methods areas particularly suited to interdisciplinary learning

Learning styles associated with current taught postgraduate course

Perceptions of co-learning environments for staff and students

Theme 4: Demands made by a new interdisciplinary course

Theme 5: Vocationality and interdisciplinary courses

Theme 6: Learning outcomes - what you have learned

Theme 7: Interdisciplinary learning in an SD context

Assessment of general course satisfaction

Student experiences?

- some indicative examples

- Defining the territory
- Transitions to interdisciplinary learning
- Learning styles
- SWOT analysis of IDL
- Learning communities
- Learning outcomes



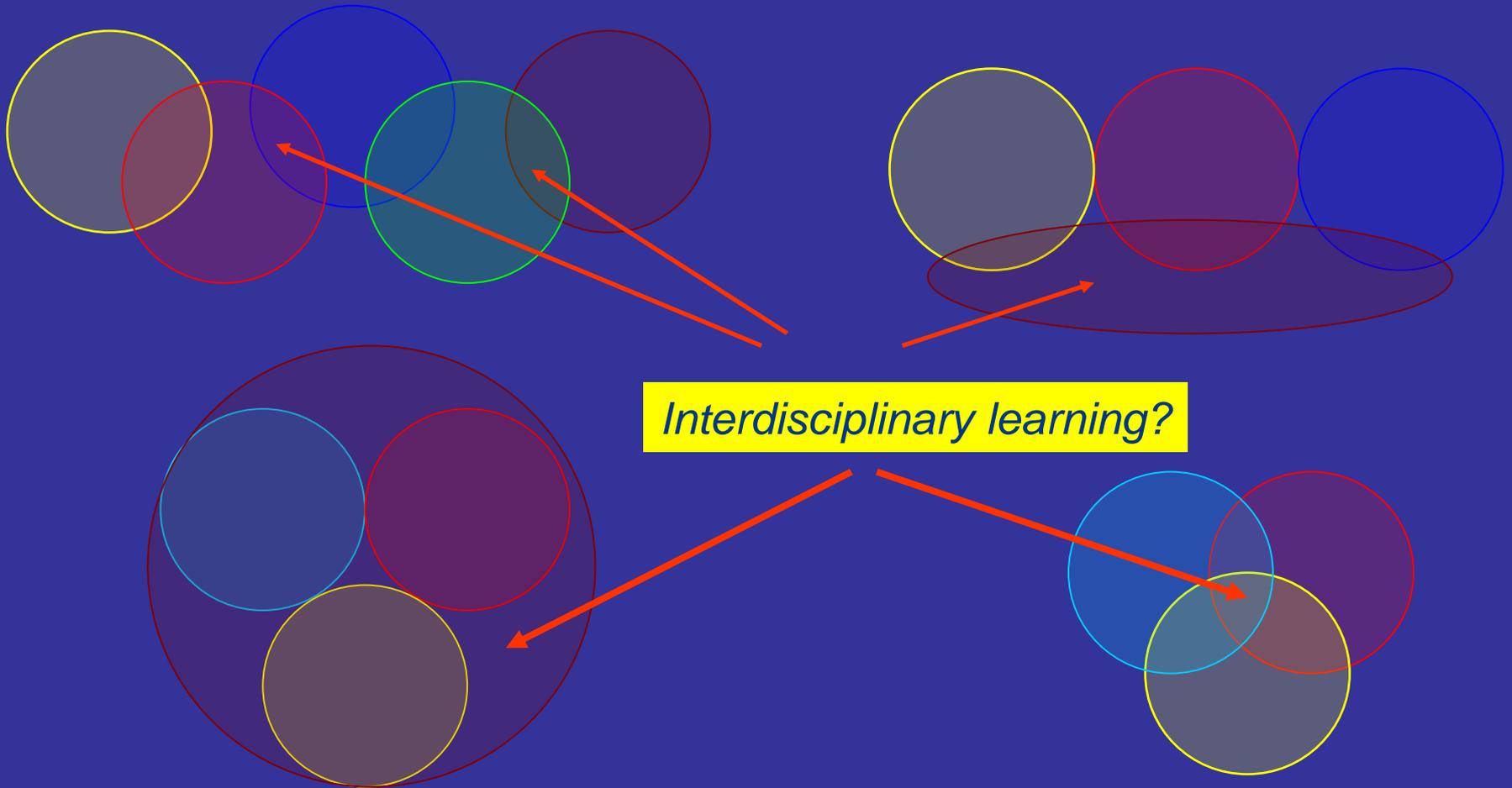
IDL - Defining the territory

Hansson (1999) refers to the “multiplicity of expectations” of IDL (p. 339), which, he argues, requires us to “increase our definitional rigour” (p. 339).

- Lack of awareness among some students of what interdisciplinary does or could mean (cf. multidisciplinary)
- Interdisciplinarity not always perceived as an overt element of modules or the course
- Student responses reaffirm the ‘looseness’ of definition with regard to interdisciplinarity by offering a range of differing descriptions: e.g. “**multi focussed**”, “**mingling**”.

“I think maybe ‘synergy’ is the word I am looking for to try and summarise what I mean. Interdisciplinary is a less familiar term.”

Students visualising their conceptions of interdisciplinarity....

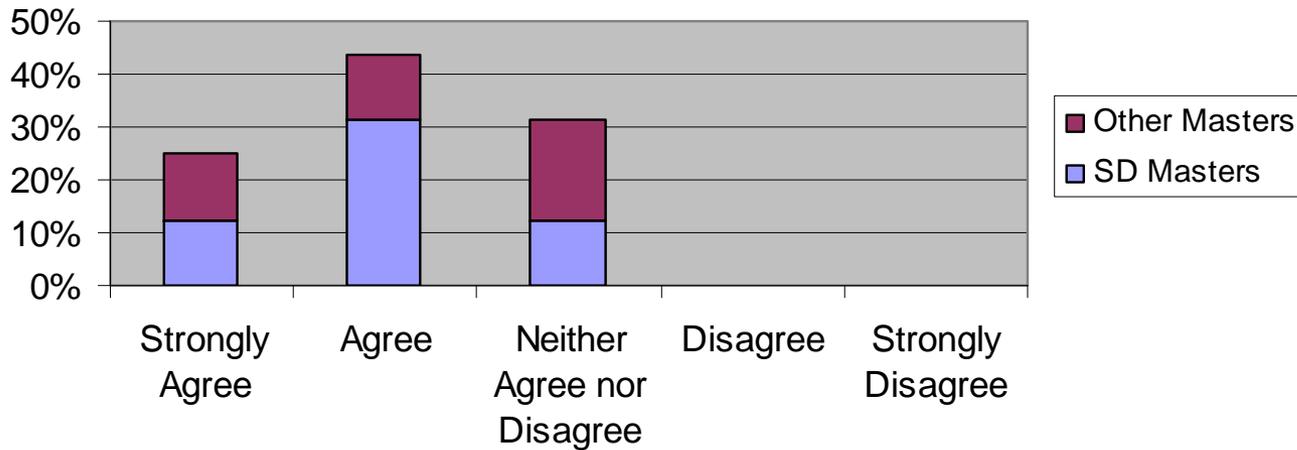




IS S R P

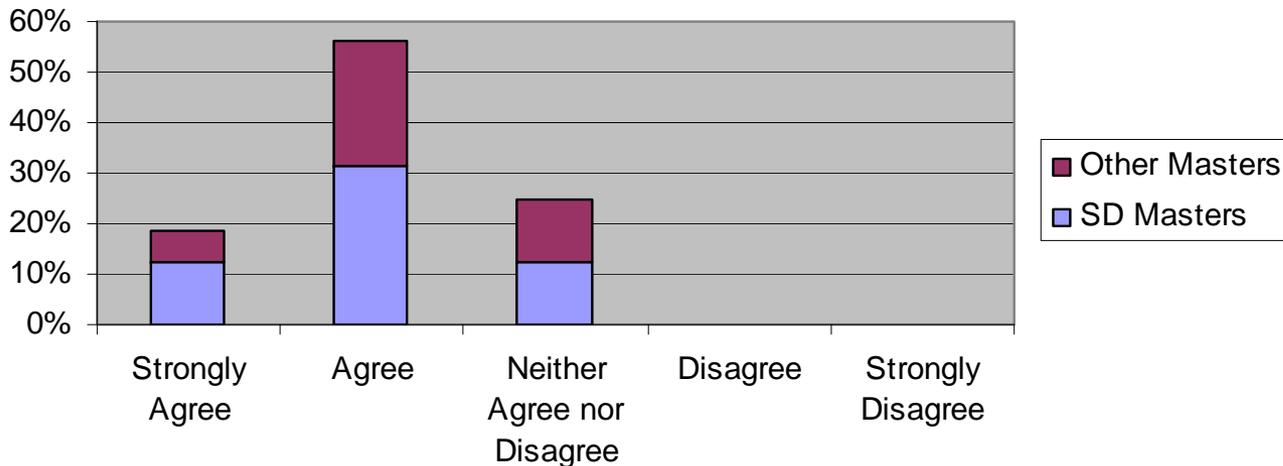
Student experiences of 'transition' to interdisciplinary Master's courses?

Q26: The learning experience has encouraged me to build bridges between my previous and current bodies of knowledge in a meaningful way



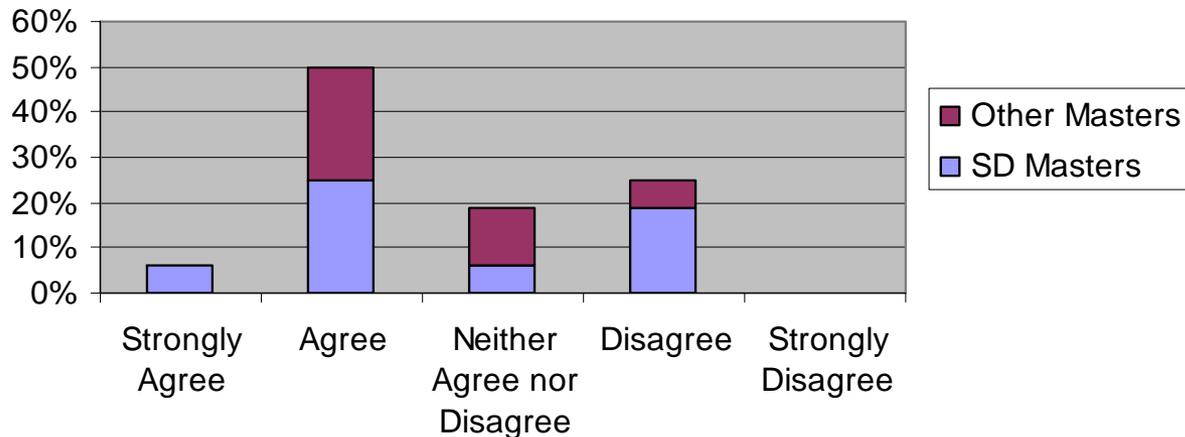
63% in 'agree' categories

Q27: The interdisciplinary learning experience has encouraged me to integrate methods and approaches between my previous and current academic experiences



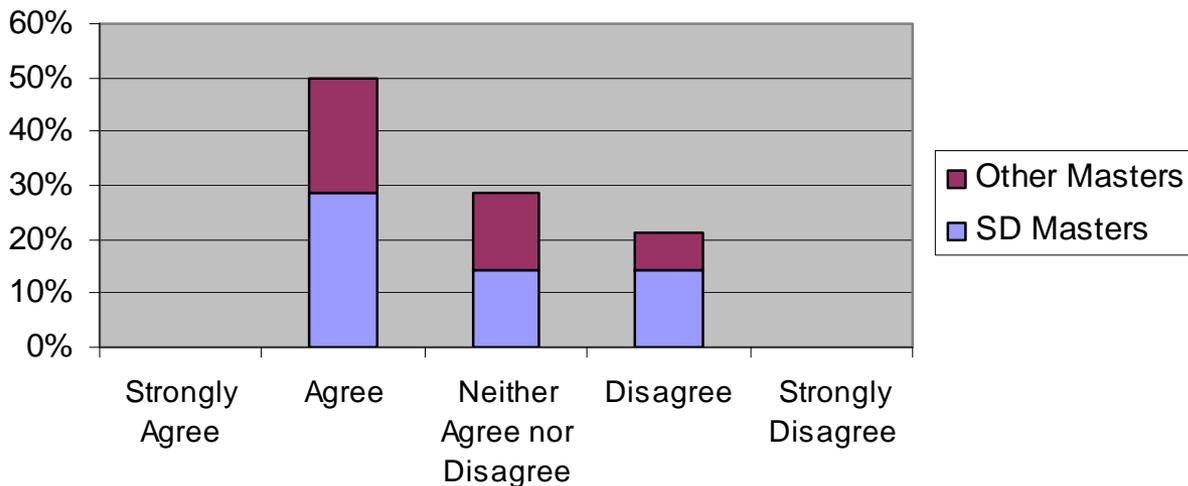
75% in 'agree' categories

Q30: I found encountering new knowledge and approaches to study in my interdisciplinary Masters programme difficult



56% in 'agree categories

Q32: From the beginning, the benefits of interdisciplinary study were clear to me



50% in 'agree categories

Challenges during transition

(c.f. Brewer, 1999)

“everything came into context, everything made sense but in the initial stage everything was ... is so individual and unrelated it was quite difficult.”

“Then I suppose the barrier is if you’ve come from a single discipline or a very specific way of learning then you’re playing catch up to some people....”



IS S R P

Learning styles brought to IDL?

Variable personal awareness in students of
what 'learning style' means

"I don't understand the question. The notion that I am aware of any personal "learning styles" is an educationist's fantasy. I just learn the way I learn!"

ACCOMMODATOR

Active Experimentation and Concrete Experience (AE & CE)

- Can carry out plans
- Interested in action and results
- Adapts to immediate circumstances
- Trial and error approach
- Sets objectives and schedules
- Likes a practical, experiential approach

DIVERGER

Concrete Experience and Reflective Observation (CE & RO)

- Imaginative and good at generating ideas
- Can view situations from many angles
- Open to experience
- Recognizes problems
- Investigates
- Senses opportunities
- Prefers to watch than act, and uses imagination to solve problems

CONVERGER

Abstract Conceptualization and Active Experimentation (AC & AE)

- Good at practical applications
- Makes decisions
- Focuses effort
- Evaluates plans
- Selects from alternatives
- Solves problems
- Prefers technical tasks

ASSIMILATOR

Reflective Observation and Abstract Conceptualization (RO & AC)

- Able to theorize
- Compares alternatives
- Defines problems
- Establishes criteria
- Formulates hypotheses
- Takes a concise logical approach
- Prefers a good explanation to a hands on experience

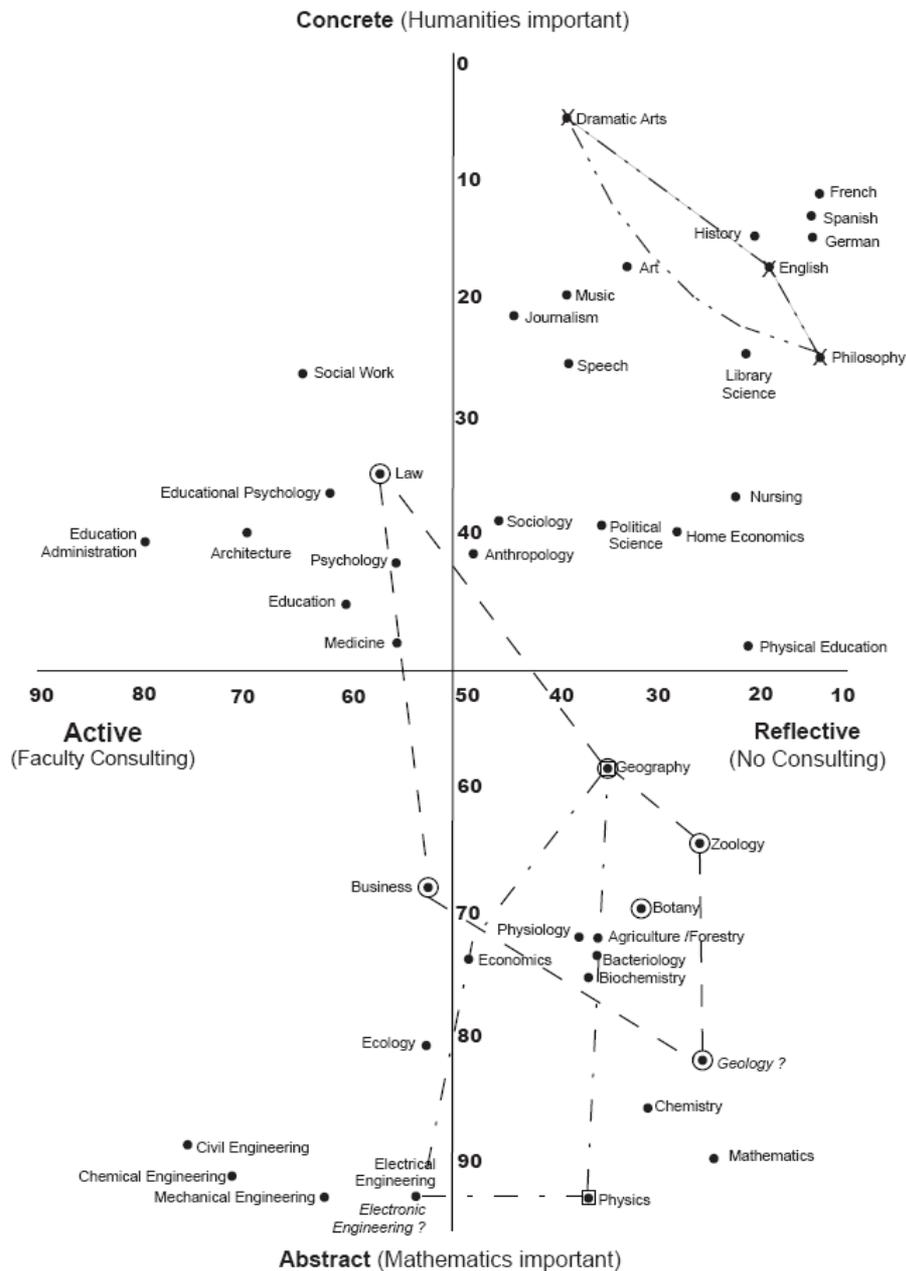
Characteristics of Kolb's Learning Styles (Healey et al., 2005; adapted from Kolb 1984, 86; Gibbs 1988, 20)

What if

How?

Why?

What?



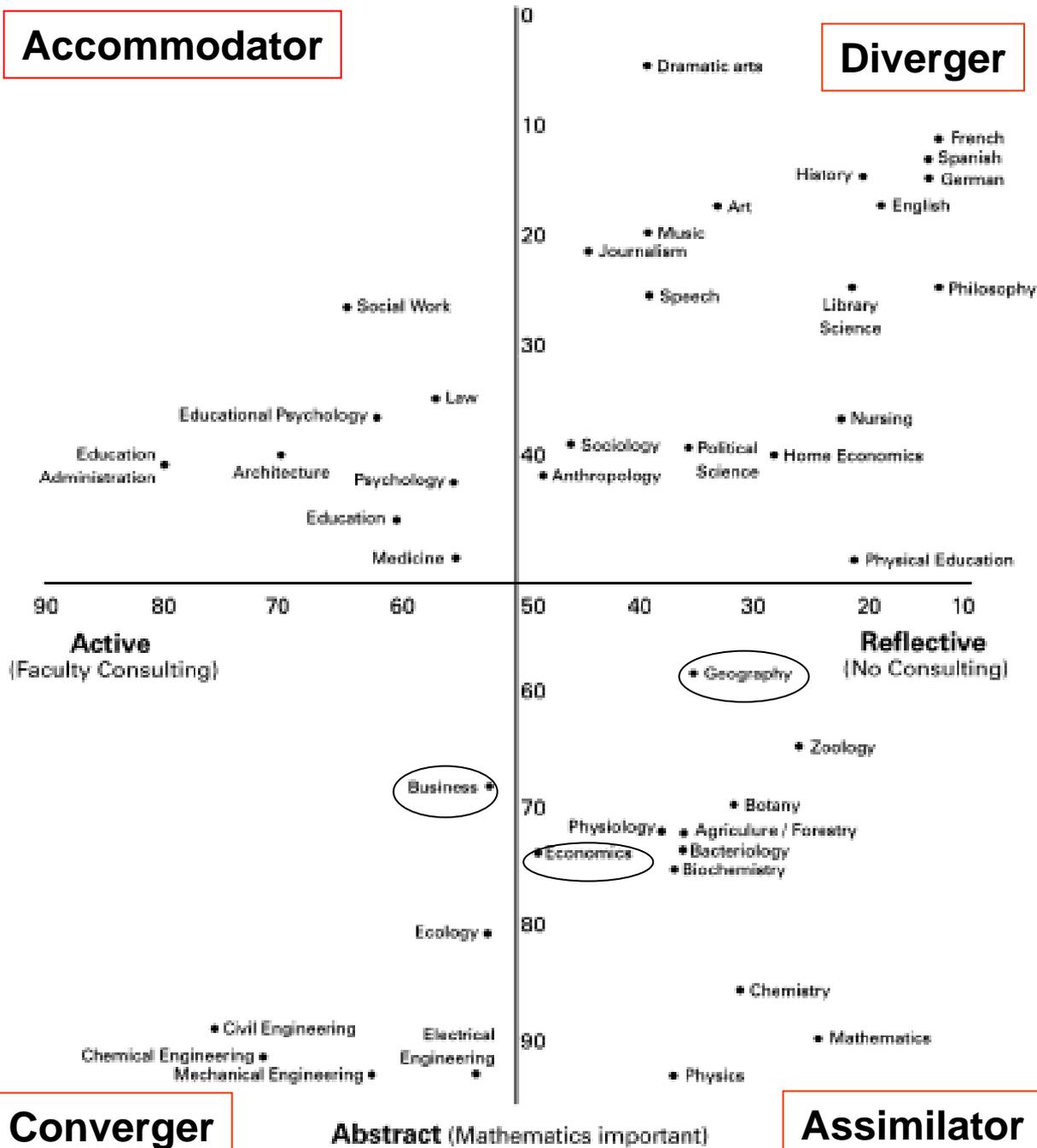
Concrete/ Abstract
and Active/
Reflective
orientations of
academic fields with
the
discipline mix of
three PGT courses
in this projected
added (from Kolb
1984, p. 127)

(Source: McEwen *et al.*, 2009)

Concrete (Humanities important)

Accommodator

Diverger



Concrete/Abstract and Active/Reflective orientations of academic fields (from Kolb 1984, 127)

Example - comparisons with learning styles of undergraduate geographers. Healey *et al.*, 2005 found 45% assimilators; 24% convergers; 14% accommodators; 17% divergers. Also found intra-national and international variation

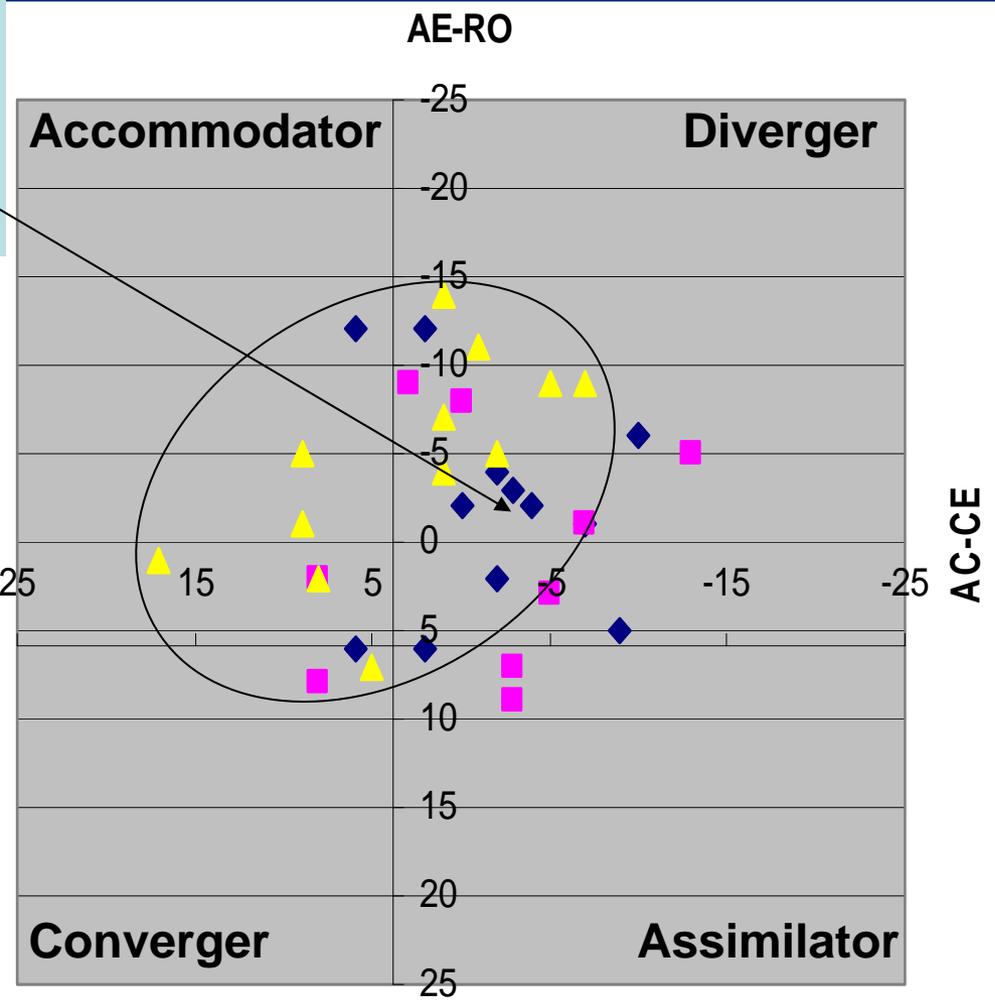
Learning styles

Concrete experience (CE)

Learning styles for IDL

Predominance of 'accommodators' and 'divergers'

Active experimentation (AE)



Abstract conceptualisation (AC)

- ◆ Previous undergraduate learning style (students on PGT in Environment and Sustainable Development)
- Previous undergraduate learning style (students on PGT in other areas)
- ▲ Perceived postgraduate learning styles associated with interdisciplinary PGT

Reflection and observation (RO)

Based on the experiential learning model and associated learning styles (from Kolb, 1981; 1984)



IS S R P

Students' experiences - SWOT analysis of interdisciplinary learning?

Strengths

Gaining knowledge of several different perspectives in order to see the 'wider picture'.

Working with and learning from a diverse range of staff and students.

Learning to work with people from different backgrounds/disciplines is a valuable skill for the workplace.

Weaknesses

Prior knowledge – may be inaccurately assumed or covering familiar ground for the benefit of others may be tedious.

Cross over from different/unfamiliar subjects, particularly scientific methods for those from a non-scientific background.

Perception that the wide breadth of the material covered means that subject depth is 'watered down'.

Opportunities

A potentially unique chance to work with, and learn from, others with a diverse range of backgrounds and experiences

The chance to get a more complete view of the subject area.

Opportunity to significantly develop learning skills, e.g. 'opens the mind'.

Workplace and skills related opportunities.

Threats

Lack of specialisation (related to perceived lack of depth of study). Too much material covered.

Not understanding concepts from unfamiliar disciplines/ perceived incompatibility of scientific and non-scientific subjects.

Potential for confusion.

Employers may not appreciate the benefits of interdisciplinary learning. Lack of specialisation may also affect employment prospects.

Strengths

“So between us we did have four times as much knowledge with an overlap, rather than one set of knowledge almost coming from the same company, or the same city, or the same discipline, so yes it was quite useful just in terms of conversation and for course work as well.”

“New areas of ideas and communication opening that were not noticed before”

Weaknesses

“The information may be too technical for you to understand or too science based.”

“You can sometimes question your own chosen methodologies when talking to others from other disciplines which can sometimes put doubt in your mind”

Threats

“Science is replaced with unsubstantiated opinion.”

“Sometimes other researchers from other backgrounds do not understand the concepts of research in your particular field/discipline.”

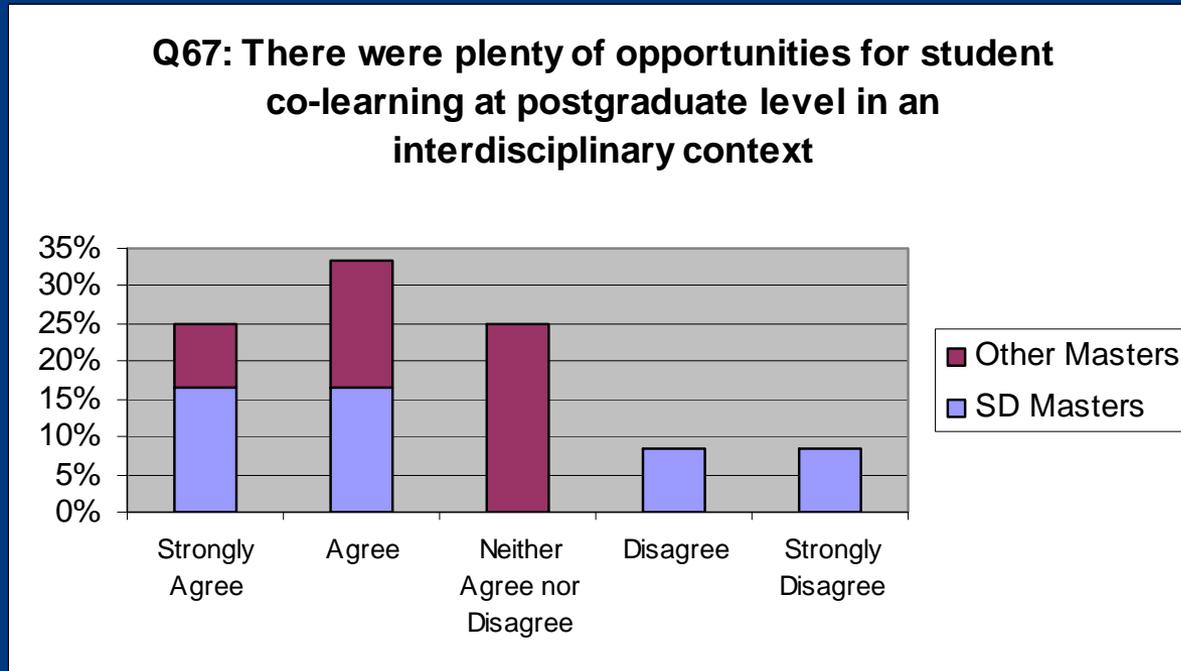
Opportunities

“You definitely learn from one another, it was not about just listening to a tutor.”

“In gaining skills from others and engaging this will be of use in the workplace when you will be surrounded by people of different backgrounds that you must engage with.”

IDL and learning communities

- Opportunities for co-learning



58% in 'agree' categories; those that 'disagree' are in SD Masters

- Communication skills (language)

“Cooperation” is an essential component of “communication at the interfaces of the disciplines...” (Hansson, 1999, 341).

- Role of tutors in interdisciplinary learning

Communication

“I think it’s also very good because when you .. you are able to look at problems and able to bring together maybe different people and get the best out of them and at least be able to communicate to a wider audience.”

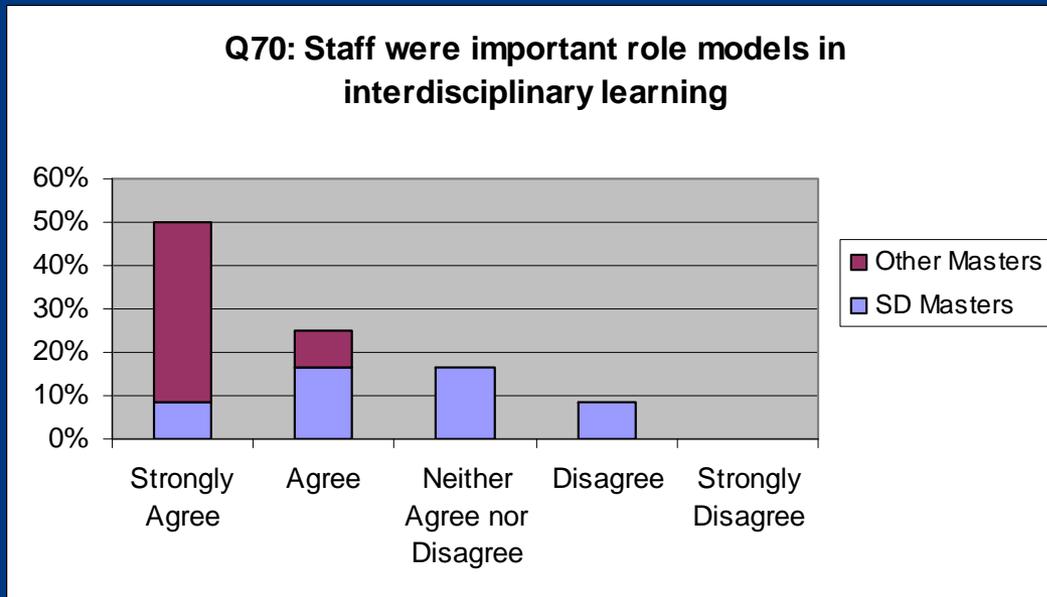
Language in IDL (disciplinary tribes....

“It was like learning a different language, a language that was in a different alphabet like Japanese or something. It was really tough because it is an entirely brand new way of describing an environment, or a world almost.

“Yes it was about language which had so many rules and exceptions. It was like learning English for the first time.”

Developing effective IDL learning communities - role of tutor

- crucial as role model/exemplar



*76% in
'agree'
categories*

- integrator of discipline knowledge and skills
- role of 'course leader' of particular significance

Role of tutors in interdisciplinary learning?

'He [course leader] is a good example of multi-discipline or inter-disciplinarian in that he knows a fair bit about chemistry and physics and biology, mathematics and the whole gamete of science rather than just being a geographer or a geographer physicist. He's a very good example of somebody who knows a lot about everything rather than a bit about everything.'

Role of tutors in interdisciplinary learning?

“I think it’s almost more difficult for the academic structure to deliver an interdisciplinary course because people come from their specialisations and they have a specialisation which they teach, which they lecture to, and they tend to deliver that and then the integration happens within the student or within the group of students.”

Importance of team teaching

“courses I’ve done and enjoyed the most have been those which have had a single person almost directing it and been constantly there even when there are guests so that they can bring in the contextualisation of it. The ones where I’ve struggled are the ones where someone comes in to talk about forest policy and the next person talks about soil policy. “

“ours was remarkable for the fact that we were introduced to some tutors who came from, in our case sociology and the other case philosophy who kind of gave you a different geometry of how research might work so it was like a breath of fresh air every time, something new happened all the time and it was very free wheeling,”

Perception of learning outcomes in IDL (more restricted cf. Ivanitkaya *et al.*, 2002)

- ways of thinking - thinking holistically
***“the holistic idea, that it makes you a better worker as well just being able to see everyone’s point, or all points in a rational, rounded opinion of something rather than just seeing one side of it or not knowing that there was another side to it because you hadn’t looked for it.*”**
- making connections and the ability to integrate information
- insight into a range of different research methods
- problem-solving skills
- organisational skills
- skills in communication beyond the discipline

Vocational skills and IDL

Strong view that skills learnt from interdisciplinary study equip students for employment in the modern work context.

“You should be flexible, be able to multi task and do more than one thing at a time.”

“I hope that the interdisciplinary nature of future jobs will lend itself to a broad background of skills.”

Learning outcomes

Student responses suggest 'cross-fertilisation' in IDL is an organic rather than a directed process:

“At the time you think this is just for fun. I think that was quite interesting and quite revealing that they, the tutors, could think of the world in that way. That they could see links that perhaps we couldn't. So you're learning how to see things on a bigger scale I think.”

“It's more a case that you learn the individual things and then you stitch them all together. You don't realise but you have stitched them all together by the end of it.”

Conclusions

- PGT cohorts increasingly diverse – discipline base only one facet of diversity (different cultural contributions can be more overt)
- Interdisciplinary learning varies significantly in the extent to which it is explicit and planned. Good practice could make the learning outcomes from IDL more explicit from outset?
- Important to identify how different disciplinary groups experience the ‘transition’ to interdisciplinary learning (and their associated support needs)
- Important to develop effective supportive co-learning communities from outset – with particular attention to drawing on the strengths of peers and the integrating role of tutors



Conclusions (cont.)

- Interdisciplinary learning outcomes are perceived as sitting well with vocationality and workplace preparation
- Interdisciplinary learning and SD focus are considered mutually supporting and provide an excellent test bed for developing good and innovative practice in IDL at Master's level
- Generated questions for further exploration. Extended work and larger student sample (beyond the pilot HEIs) needed to explore specific themes further



Selected references

- Brewer, G. D (1999) 'The challenges of interdisciplinarity' *Policy Sciences* 32, pp 327-337.
- Entwistle, N (2003) Concepts and conceptual frameworks underpinning the ETL project. *ETL Project Occasional Report 3*.
- Graybill, J. K. *et al.* (2006) A Rough Guide to Interdisciplinarity: Graduate Student Perspectives *BioScience*, 56 (9), 757-763
- Hansson, B. (1999) 'Interdisciplinarity: For what purpose?', *Policy Sciences* 32, pp339-343.
- Healey, M., Kneale, P. and Bradbeer, J (2005) Learning styles among geography undergraduates: an international comparison. *Area* 37.1, 30-42.
- Ivanitskaya, L. *et al.* (2002) Interdisciplinary learning: process and outcomes. *Innovative Higher Education* 27, 95-111.
- Karlqvist (1999) 'Going beyond disciplines', *Policy Sciences* 32, pp379-383.