Tackling the wicked problem of creativity in higher education

Norman Jackson
Surrey Centre for Excellence in Professional Training and Education, University of Surrey
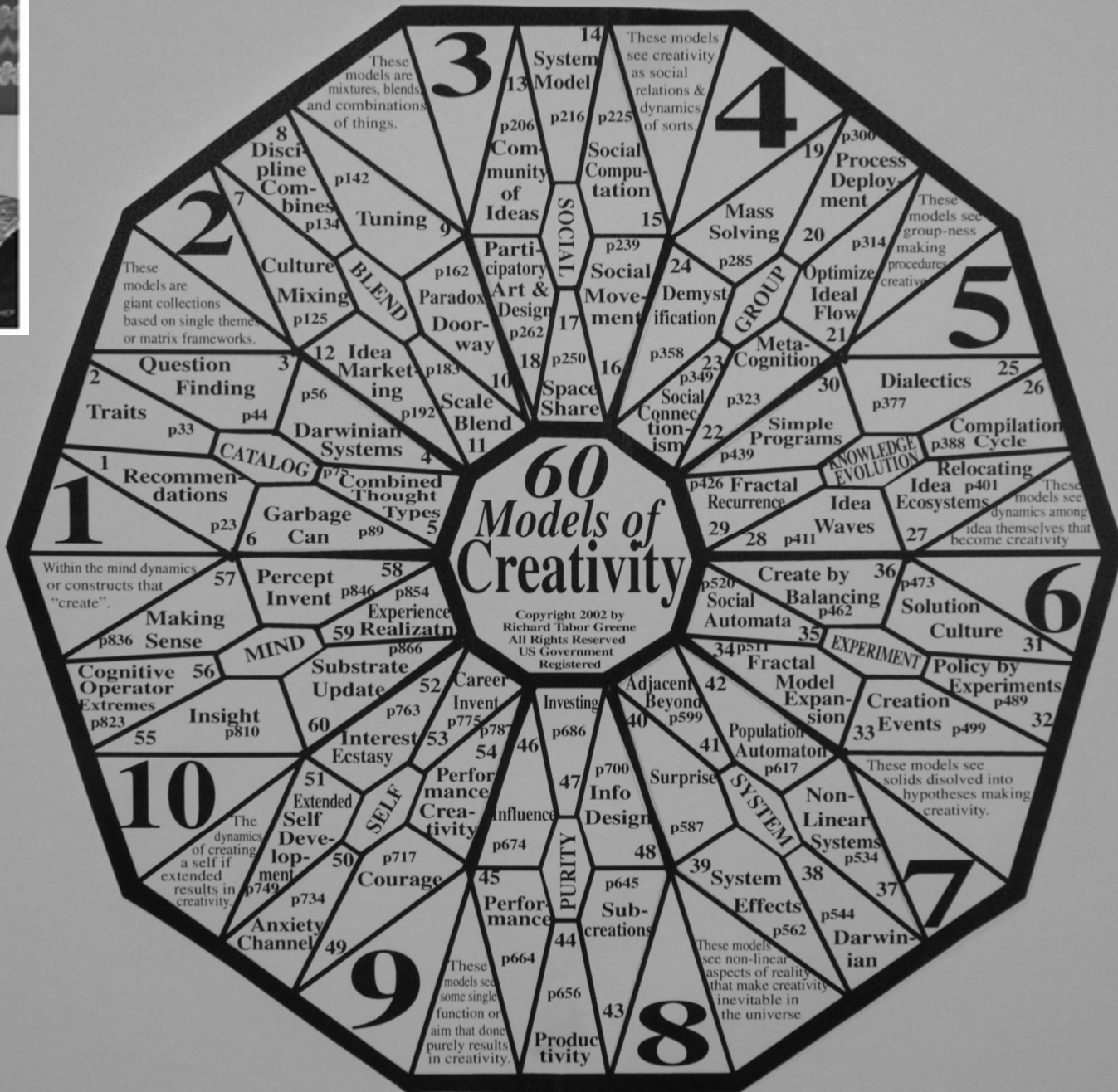
background paper and slides – http://normanjackson.pbwiki.com/

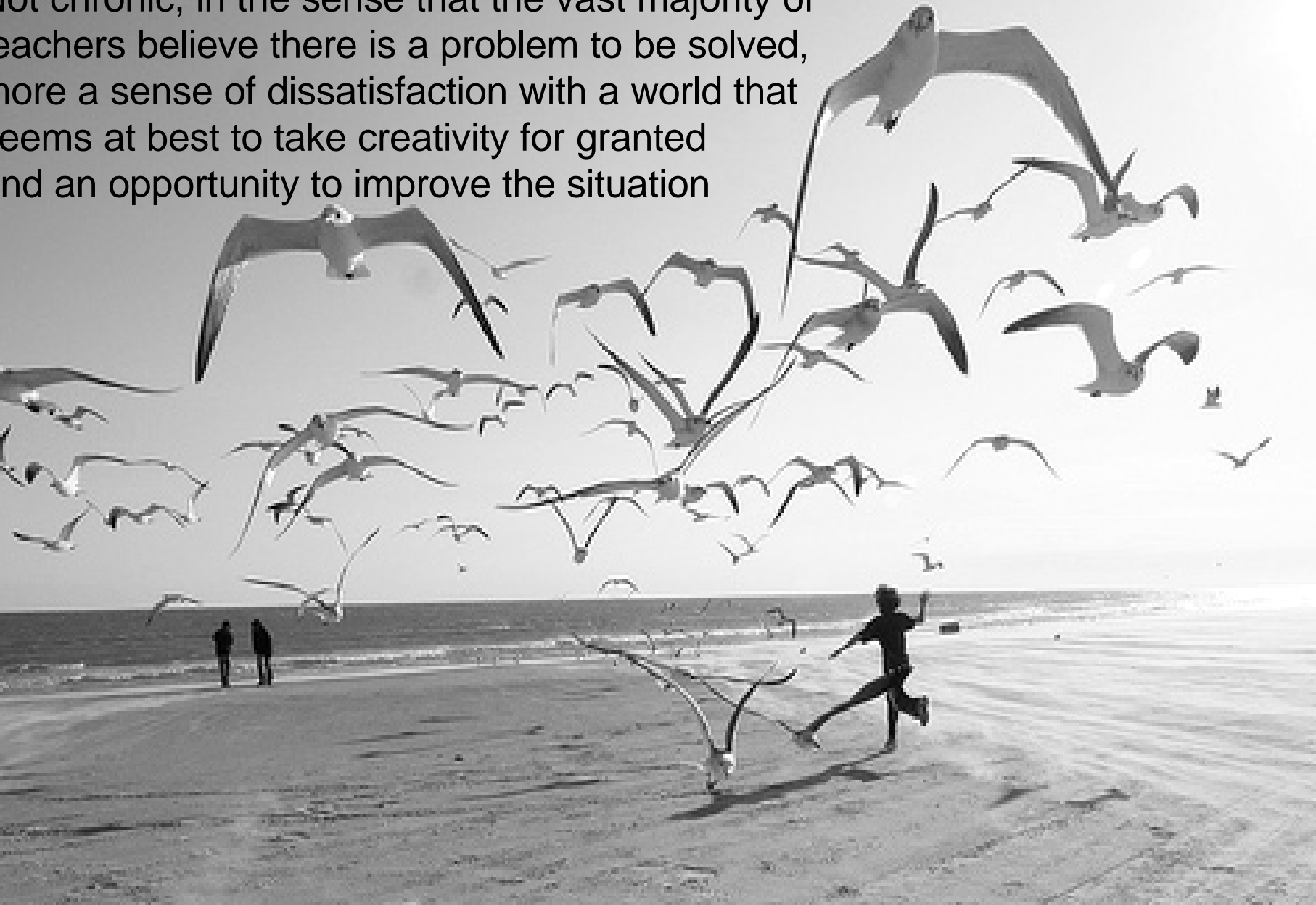# creativity in HE problem

1 Creativity is omnipresent rather than being absent.

2 Teachers' creativity and creative processes are largely implicit and are
   rarely publicly acknowledged and celebrated

3 Creativity is rarely an explicit objective of learning and assessment in HE

4 Creativity only has meaning when it is directly associated with
   the practices and forms of intellectual engagement in their discipline

5 Additional work necessary to implement more creative approaches

6 Difficulty of assessing creativity

7 Numerous organisational barriers and constraints

8 Sheer complexity of the idea of creativity

60 Models of Creativity

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US Government
Registered

1 — These models are giant collections based on single themes or matrix frameworks.

CATALOG
- 1 Recommendations p23
- 2 Traits p33
- 3 Question Finding p44

2 — These models are mixtures, blends and combinations of things.

BLEND
- 7 Discipline Combines p142
- 8 Culture Mixing p134, p125
- 9 Tuning
- 12 Idea Marketing p56
- Paradox Doorway p183
- Darwinian Systems p192
- 4 Combined Thought Types p89
- 5 Scale Blend p77
- 6 Garbage Can

3
- 13 Community of Ideas p206
- 14 System Model p216

SOCIAL — These models see creativity as social relations & dynamics of sorts.
- Participatory Art & Design p162
- Space Share p262
- 10 p250
- 17 Social Movement p239
- 15 Social Computation p225
- 16

4
- 19 Process Deployment p300
- 24 Demystification p285
- 20 Optimize Ideal Flow p314
- 21

GROUP — These models see group-ness making procedures creative.
- Mass Solving
- 23 Meta-Cognition p358
- 22 Social Connectionism p349, p323
- Simple Programs p439

5
- 25 Dialectics p377
- 26 Compilation Cycle p388
- 30
- 27 Relocating Idea Ecosystems p401
- 28 Idea Waves p411
- 29 Fractal Recurrence p426

KNOWLEDGE EVOLUTION — These models see dynamics among ideas themselves that become creativity.

6
- 36 Create by Balancing p473
- 35 Social Automata p520, p462
- 34 Fractal Model Expansion p511
- 31 Solution Culture
- 32 Creation Events p499
- 33 Policy by Experiments p489

EXPERIMENT — These models see solids dissolved into hypotheses making creativity.

7
- 42 Adjacent Beyond p599
- 41 Population Automaton p617
- 40 Surprise p587
- 37 Darwinian p544
- 38 Non-Linear Systems p534
- 39 System Effects p562

SYSTEM — These models see non-linear aspects of reality that make creativity inevitable in the universe.

8
- 43 Productivity p656
- 44 Performance p664
- 45 p674
- 46 Investing p686
- 47 Info Design p700
- 48 Sub-creations p645

PURITY — These models see some single function or aim that done purely results in creativity.
- Influence p587

9
- 49 Anxiety Channel p734
- 50 Courage p717
- 51 Extended Self Development p749
- 52 Career Invent p775
- 53 Interest Ecstasy p763
- 54 Performance Creativity p787

SELF — The dynamics of creating a self if extended results in creativity.

10
- 55 Cognitive Operator Extremes p823
- 56 Insight p810
- 57 Making Sense p836
- 58 Percept Invent p846
- 59 Experience Realization p854, p866
- 60 Substrate Update

MIND — Within the mind dynamics or constructs that "create".

Creativity in HE problem proposition

Not chronic, in the sense that the vast majority of teachers believe there is a problem to be solved, more a sense of dissatisfaction with a world that seems at best to take creativity for granted and an opportunity to improve the situation

Creativity and innovation: UK political context 1998-2008

For the past 25 years we have optimised our organisations for efficiency and quality. Over the next quarter century we must optimise our entire society for innovation *Innovate America Report, Council of Competitiveness 2004*

UK policy discourse creativity largely associated with:
1)   culture (especially the arts)
2)   business with respect to the creative industries, the wider creative economy and the need for a culture of innovation,
3)   knowledge transfer between universities and business
4)   education (primarily pre-16 to date)
5)   enterprise / entrepreneurship education across all phases of education

New organisations to promote creativity/innovation & business enterprise
1999 National Endowment for Science Technology and the Arts
        Regional Development Agencies

Government Departments
Dept Culture Media and Sport (1995)
Dept for Business, Enterprise and Regulatory Reform (2007)
Dept for Innovation, Universities and Skills (2007)
Dept for Children, Schools and Families (2007)

Creative industries typology:
Staying ahead: the economic performance of the UK's creative industries

1 Core creative fields
Commercial outputs posses high degree of expressive value and invoke copyright protection

2 Cultural industries
Activities involve mass reproduction of expressive outputs based on copyright eg film, publishing, music video games

3 Creative Industries & activities
The use of expressive value is essential to the performance of these sectors e.g. design, software

Higher education as a whole can contribute much more to the development of a more creative economy

4 The rest of the economy
Manufacturing and service sectors benefit from and exploit the expressive outputs generated by the creative industries

Creativity in education (pre-16) 1998-2008

1 National Advisory Committee on Creative and Cultural Education (1998-99
  All our Futures: Creativity Culture and Education (1999)

2 Qualifications and Curriculum Authority (QCA)
Universalised' creativity: a curriculum for creativity and personalised learning

 'creative thinking skills' as a key skill in the National Curriculum

   Creativity involves pupils in (QCA 2004):
   Questioning and challenging
   Making connections, seeing relationships
   Envisaging what might be
   Exploring ideas, keeping options open
   Reflecting critically on ideas, actions, outcomes
                                                    '

3 Inclusion of 'Creative Development' as Early Learning Goal

Creativity in pre-university education 2006 - 2008

Paul Robert's Review Nurturing Creativity in Young People
A report to Government to inform future policy (2006)

1   Creative education in early years education
2   Creative portfolios –
3   Extended schools by 2010 – creative activities outside the school day
4   Building schools for the future (building/environment designs)
5   Leading creative learning
6   Practitioner partnerships
7   Pathways to creative industries
8   Frameworks for regulation
9   New Creative and Cultural Advisory Board

Developments in English higher education 1998 - 2008

Dearing Review of Higher Education in 1997
Policy imperatives:
1)   Assurance of quality and standards (QAA established)
2)   Enhancing T&L / professionalization of university teaching &
       rewarding excellence
1)   Widening participation/improving access
2)   Employer engagement

Infrastructure to support T&L enhancement, raise status of teaching by rewarding excellence and supporting innovation
• Teaching Quality Enhancement Funds for institutions
• National Teaching Fellowship scheme and HEI Teaching Fellowships
• Learning and Teaching Support Network / Higher Education Academy
•   24 Subject Centres and Central R&D and brokerage capacity
• 74 Centres for Excellence in Learning and Teaching

Imaginative Curriculum network: a social structure for learning

30 to 300+ participants

Jan 2001

L E A R N I N G

P R O C E S S E S
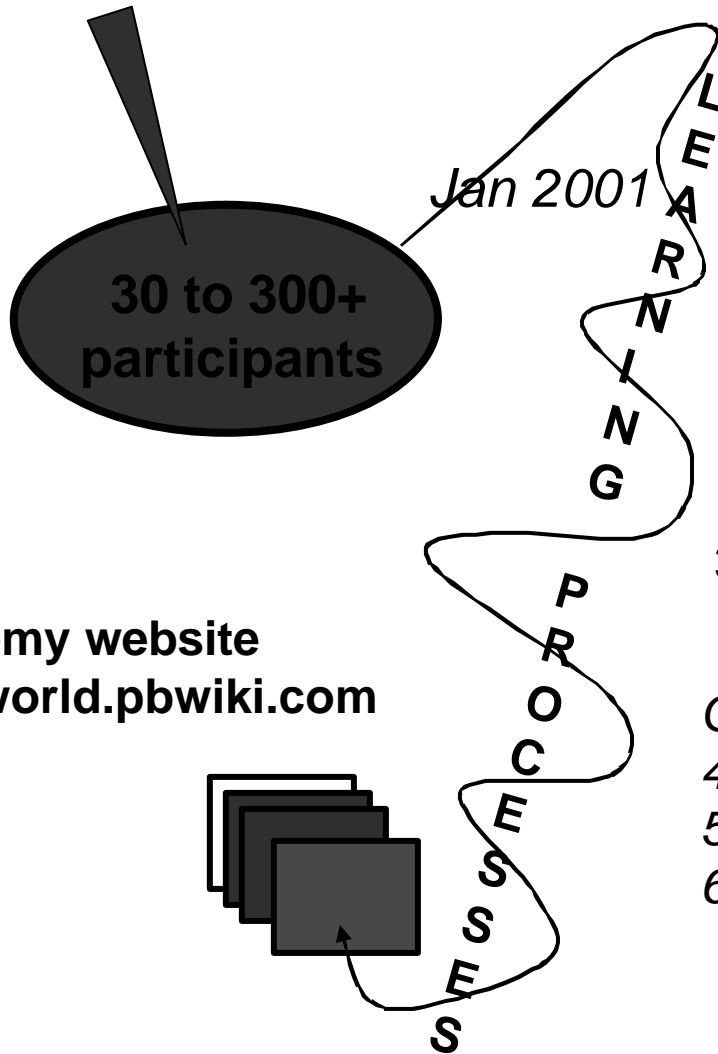
1 Teachers' and students' perceptions of creativity and how to facilitate and assess students' creative development in different disciplines

2 Disciplinary perspectives on creativi

3 Creative pedagogies

Current work SCEPTrE
4 Immersive experience and creativity
5 Work placement and creativity
6 Creativity in a Life-Wide Curriculum

HE Academy website
complexworld.pbwiki.com

Book: 'Developing creativity in higher education' Routledge-Falmer
Conference: *International Conference* Creativity & Conformity: building creative cultures in tertiary education *Cardiff January 8-10 2007*

'even where creativity was not taught, not considered teachable and not valued in assessment, it was still relevant in defining how the students saw themselves' Oliver et al (2006).

Attitudes
- Curiosity
- Willing to engage and explore
- Enthusiasm
- Being proactive
- Willing to take risks
- Determination
- Obsession

Ways of thinking
- Having new ideas – original to self
- Inspiring – energising ideas
- Having an open mind
- Thinking that is different to the norm
- Having ping moments

Effects
- Causes change
- New ideas
- New things
- Innovation
- Adaptation
- Changes you

Feelings
- Its about expressing yourself
- It feels personal to begin with but latter it might be something different
- Feels exciting
- Can be very uncomfortable
- Feels great …. *ping* moments

Doing things
- Doing new things
- Problem solving
- Connecting things
- Communicating telling stories, selling ideas, persuading others
- Making new things
- Performing

Being creative is an essential part of my identity
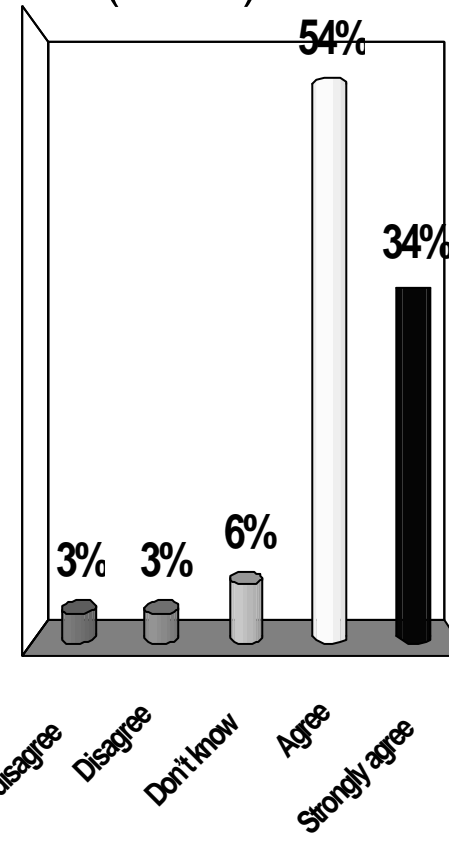
teachers Uni
of Ulster (n=58)
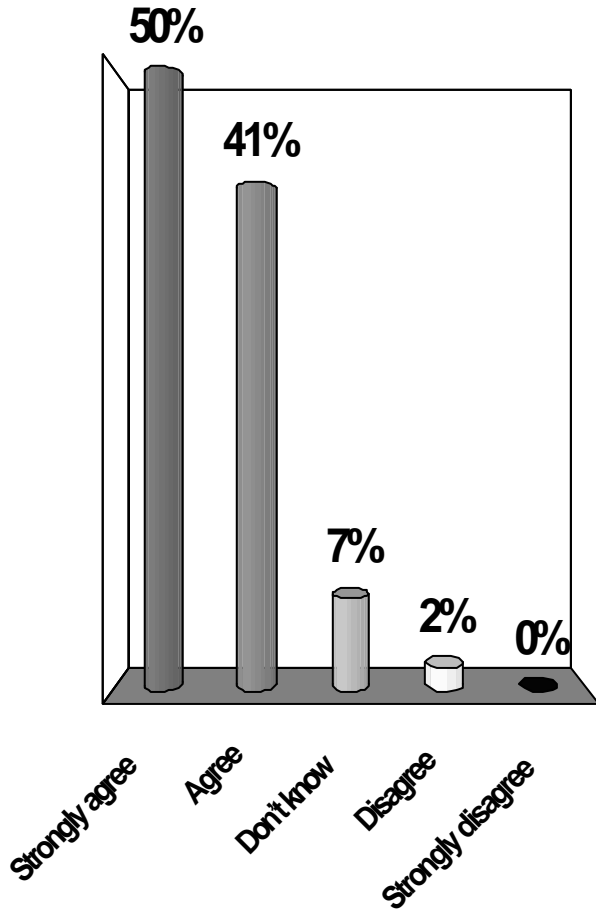
students
Uni Manchester
(n=29)
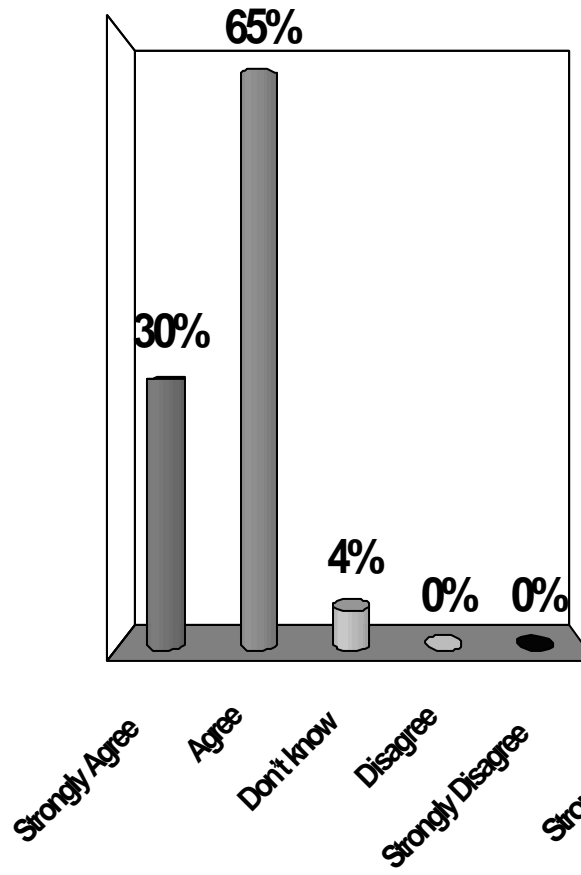
performing arts
students
Uni Surrey
(n=42)
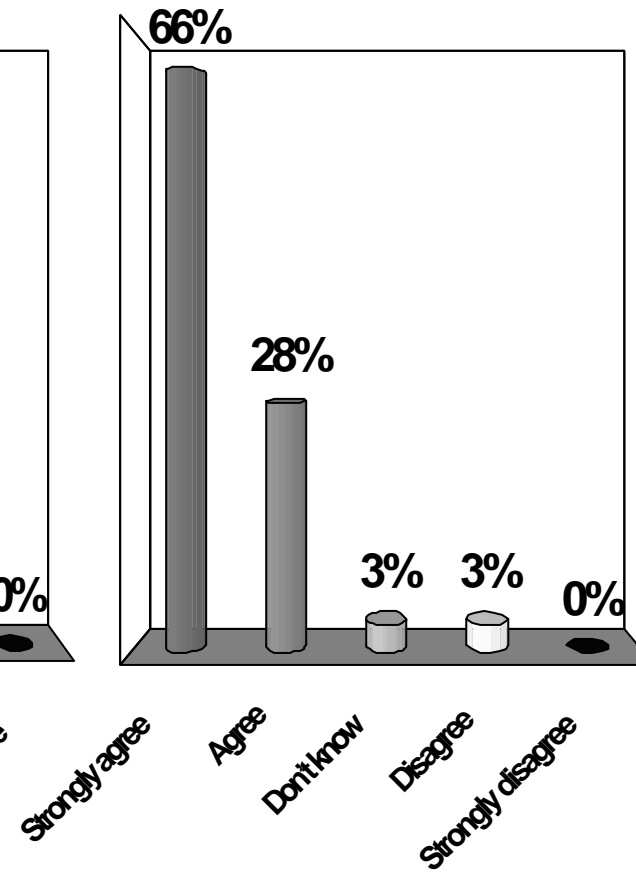
Creativity is a rare gift which only a few people have

teachers Uni
of Ulster (n=58)

students
Uni Manchester
(n=29)

performing arts
students
Uni Surrey
(n=42)

teachers Uni of Ulster (n=58)

- Strongly disagree: 40%
- Disagree: 46%
- Don't know: 6%
- Agree: 4%
- Strongly agree: 4%

students Uni Manchester (n=29)

- Strongly disagree: 25%
- Disagree: 50%
- Don't know: 13%
- Agree: 8%
- Strongly agree: 4%

performing arts students Uni Surrey (n=42)

- Strongly disagree: 17%
- Disagree: 63%
- Don't know: 6%
- Agree: 14%
- Strongly agree: 0%
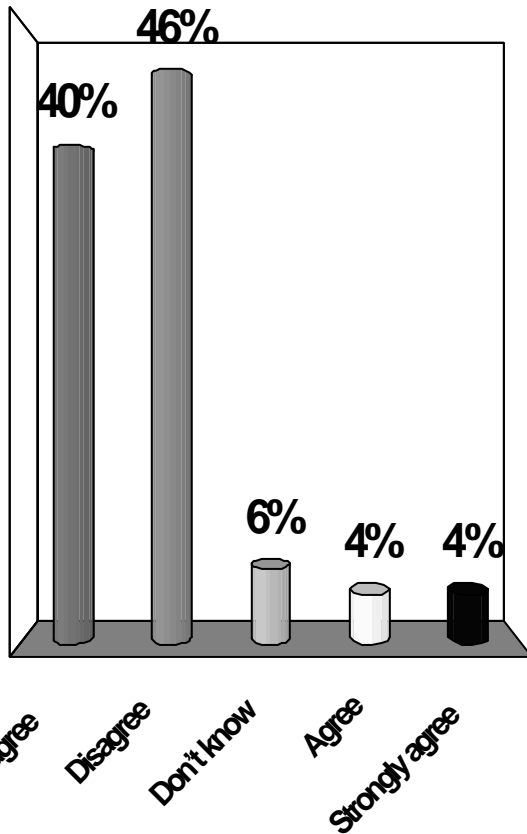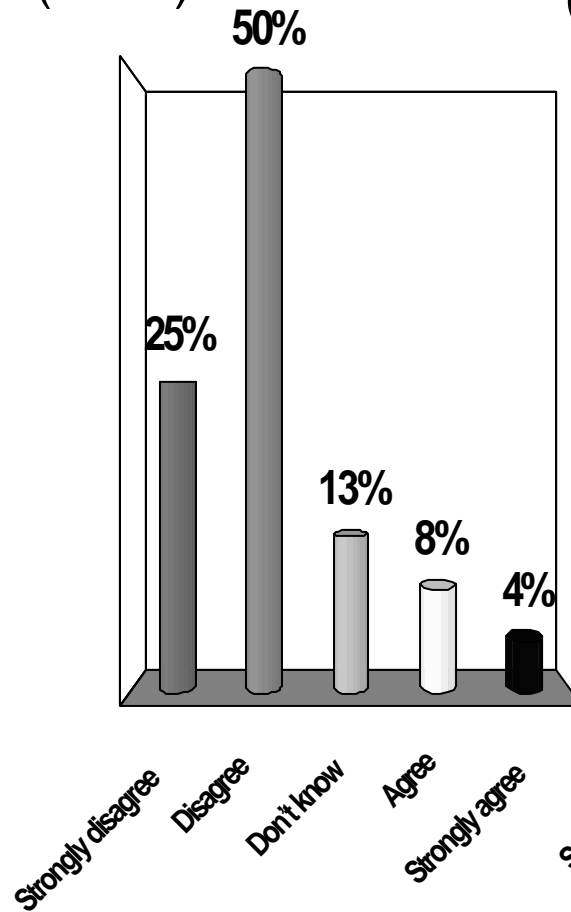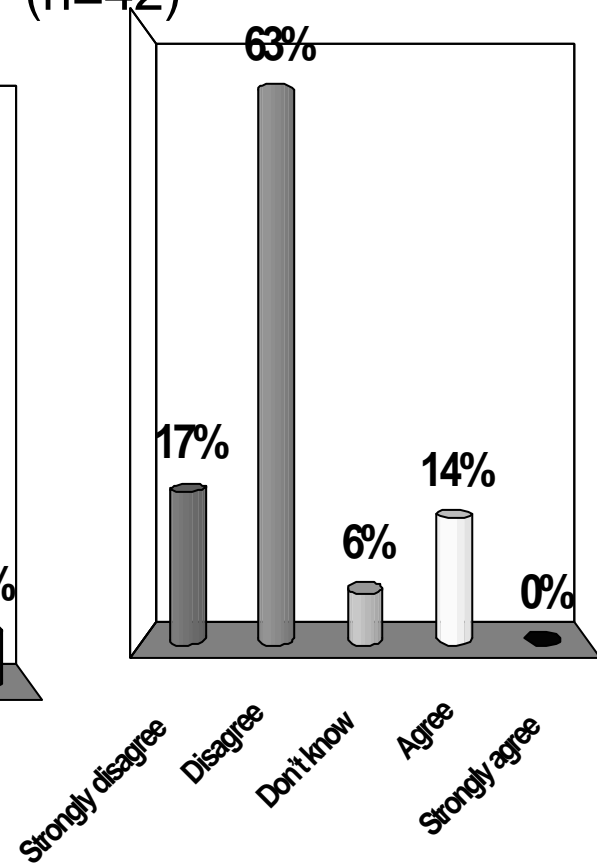
Most people can develop their creativity if they are given the opportunity to do so

teachers Uni of Ulster (n=58)

Strongly disagree	Disagree	Don't know	Agree	Strongly agree
17%	4%	2%	25%	53%

students Uni Manchester (n=29)

Strongly disagree	Disagree	Don't know	Agree	Strongly agree
29%	0%	0%	46%	25%

performing arts students Uni Surrey (n=42)

Strongly disagree	Disagree	Don't know	Agree	Strongly agree
3%	3%	6%	54%	34%
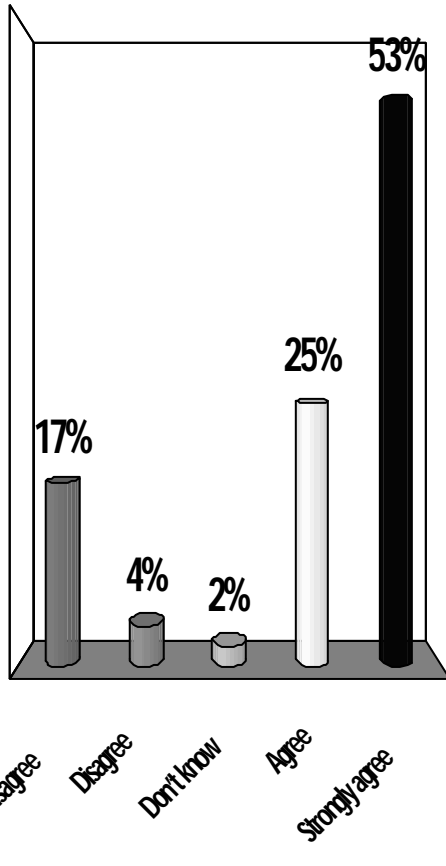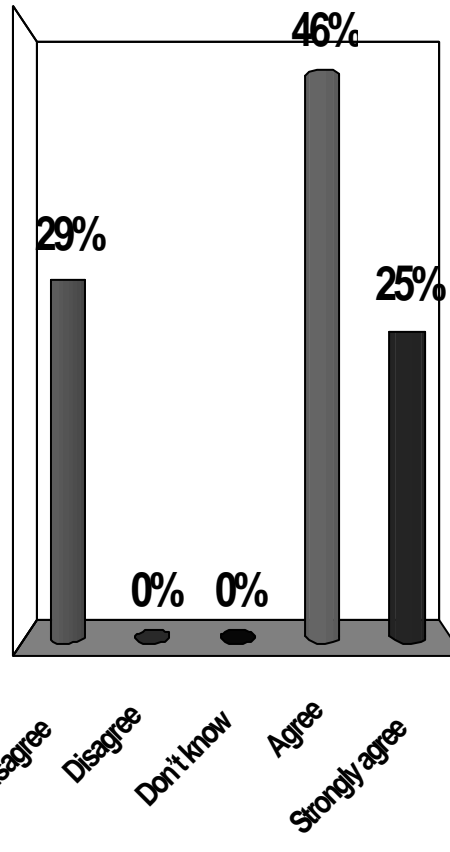
The development of learners' creativity is rarely an explicit outcome for an academic programme

27% Strongly agree
33% Agree
6% Don't know
23% Disagree
12% Strongly disagree
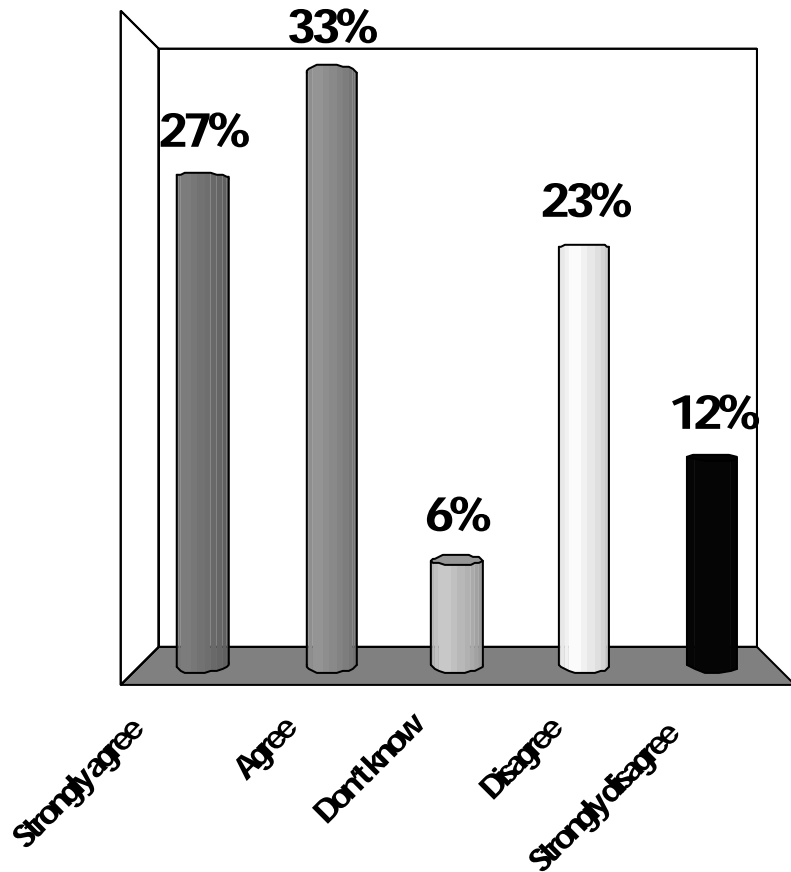
In spite of this, there are plenty of opportunities for learners to be creative in their academic programmes

4% Strongly disagree
18% Disagree
4% Don't know
33% Agree
41% Strongly agree
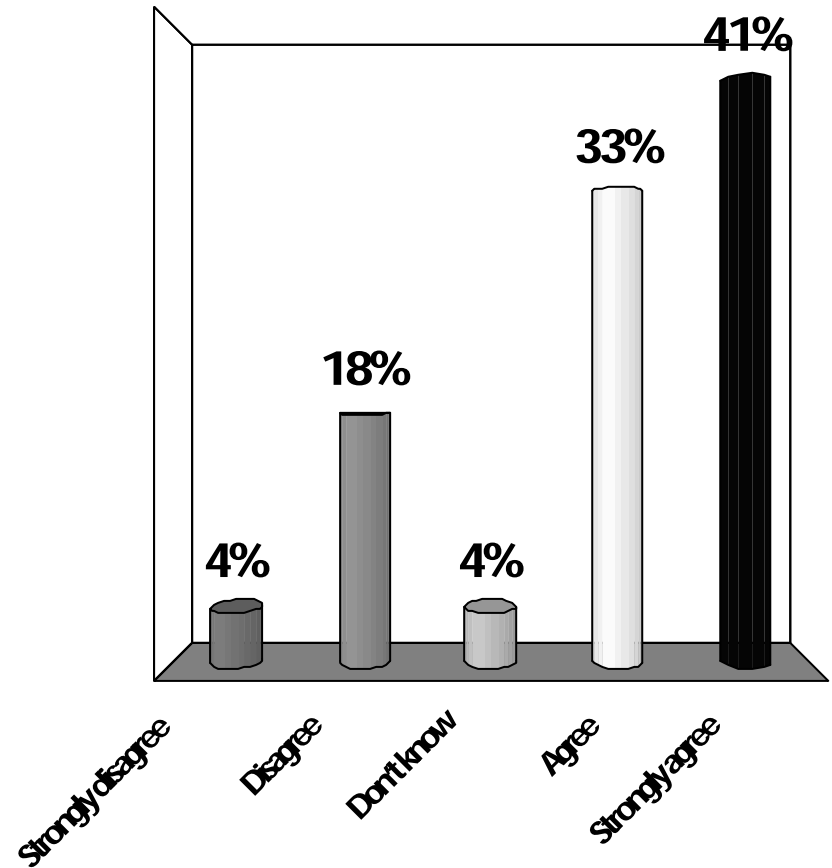
University of Ulster Teaching & Learning Conference (n=58)

Its not possible to assess students' creativity

- Strongly agree: 2%
- Agree: 10%
- Don't know: 2%
- Disagree: 46%
- Strongly disagree: 40%
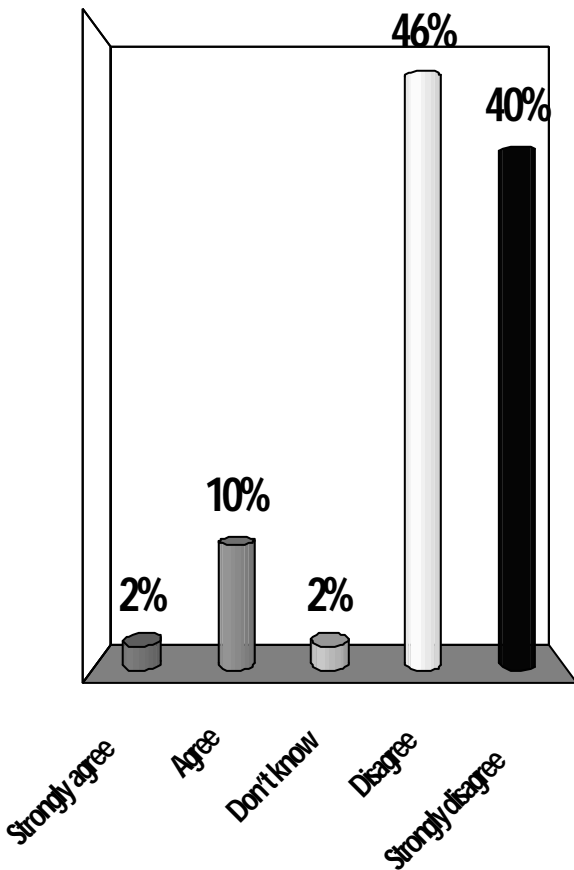
At best the evaluation of creativity is implicit

- Strongly agree: 27%
- Agree: 37%
- Don't know: 0%
- Disagree: 27%
- Strongly disagree: 10%
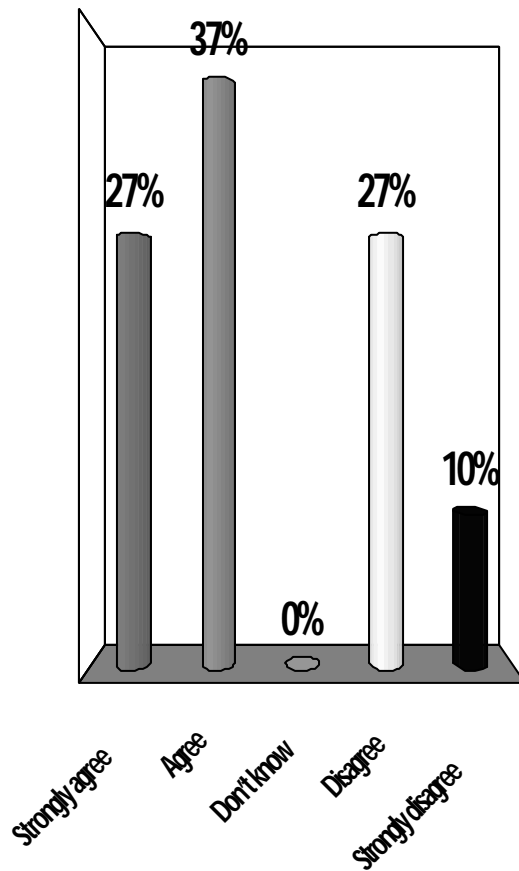
Assessment is often a major inhibitor of students' creativity

- Strongly agree: 32%
- Agree: 40%
- Don't know: 2%
- Disagree: 21%
- Strongly disagree: 6%
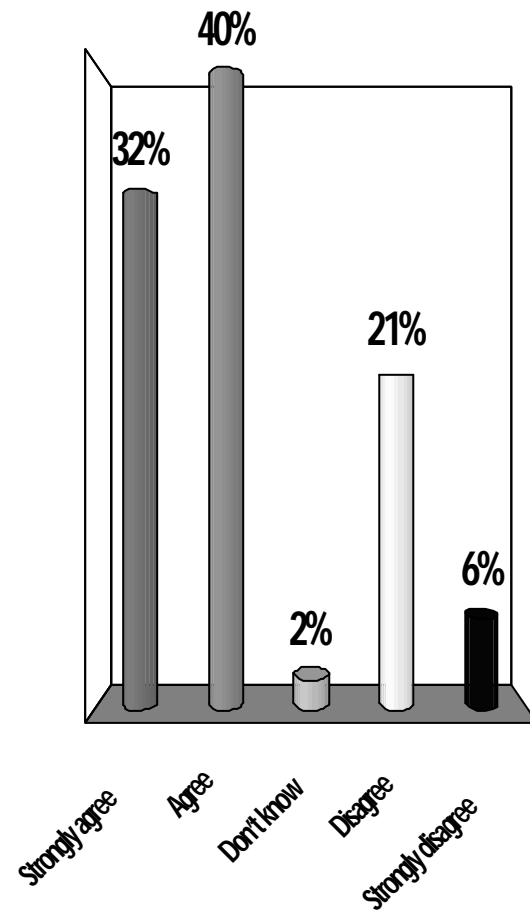
University of Ulster Teaching & Learning Conference (n=58)

The role of the teacher is not to define creativity for students and assess them against what they think it is. Rather, it is to help students understand their own creativity and help them make claims with the evidence that they believe is appropriate
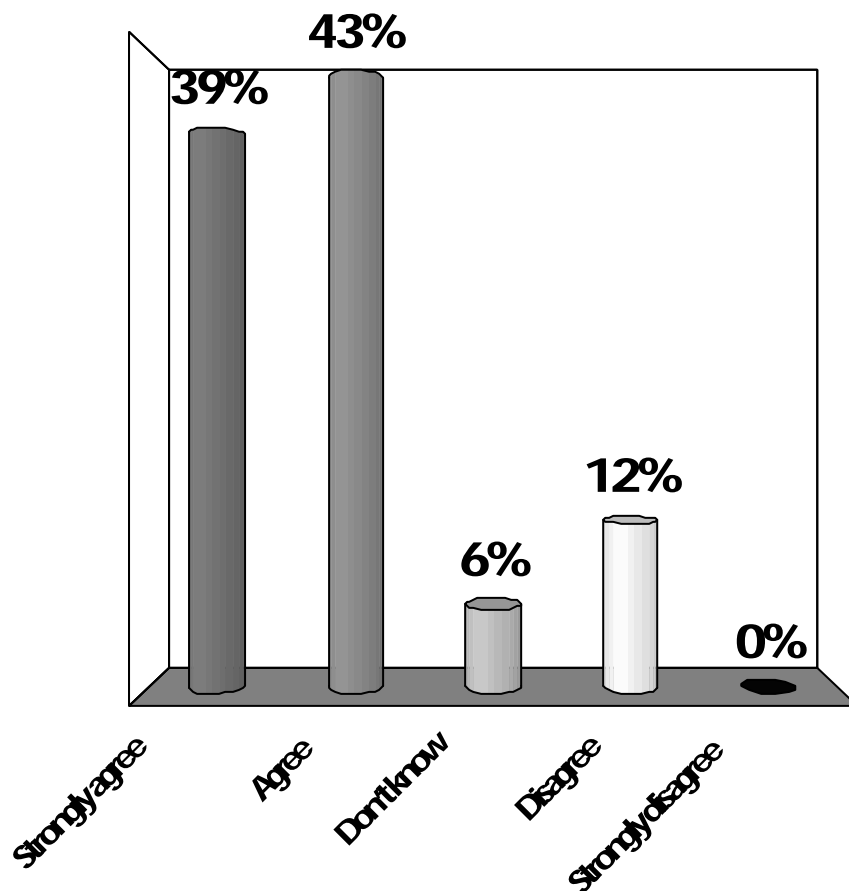
University of Ulster Teaching & Learning Conference (n=60)

Cultural and social influences on creativity
Csikszentmihayli (1999)

Starting from a strictly individual perspective on creativity I was forced by the facts to adopt a view that encompasses the environment in which the individual operates.

This environment has two salient aspects: a **cultural**, or symbolic, aspect called the *domain*; and a **social** aspect called the *field*.

Creativity is a process that can be observed only at the intersection where **individuals**, **domains and fields interact.**

Creativity in the disciplines

What do subject benchmark statements tell us about teachers' perceptions of creativity in the disciplines?

analytical tool developed by Jackson & Shaw (2006) using the categories of:
@ imagination and originality
@ thinking abilities (particularly combining analytical rational thinking with divergent and associative thinking)
@ capacity to generate/evaluate ideas
@ activities aimed at doing or producing something from the ideas generated

number of indicators (max 18) referred to in 19 subject benchmark statements (Jackson and Shaw 2006)

A&D	13	EES	7	Hist	6
Engin	9	Med	7	LRS	6
SocW	9	Bios	6	Math	5
Arch	8	B&M	6	Tour	4
DDP	8	Chem	6	Geog	4
Nurs	8	Eng	6	Ed	4
				Acc	3

Surveys of teachers in seven disciplines

In history - creativity exists in
- the processes of knowledge-gathering
- the analysis of the information from the past
- the utilisation of approaches offered by other human science disciplines
- the empathetic and imaginative representation of the past
- the process of writing and story telling
- the releasing of the imaginative truth, enabling students to apply their own life-experience to the understanding of the past.

What being creative means in seven disciplines

Being imaginative – ability to think generatively

Being original / inventive

Being able to adapt and improvise

Being curious having an enquiring disposition

Being resourceful

Being able to think synthetically and to connect ideas/things in unusual ways

Being able to think critically to evaluate ideas

Being able to communicate in ways that help people comprehend and if necessary, see things differently

conclusions from creativity research

@ general acceptance by academics that creativity is important but that it is hidden within thinking and practice and is generally not explicitly defined as a learning outcome, considered in curriculum designs or assessed.

@ subject benchmarking statements give only a partial and incomplete view of the extent to which creativity features in disciplinary thinking and practice

@ general agreement on the essential features of creativity in disciplinary thinking and practice and these features are widely recognised in all disciplines studied.

@ *Imagination* is central to being an effective historian, earth and environmental scientist, engineer, social worker or medic. People working in a disciplinary setting imagine things that only they can imagine when their knowledge, understanding and skills are engaged and their curiosity is stimulated by the things that matter to them ir their world

@ There are many sites and opportunities for creativity in disciplinary thinking and practice and these can be framed within the idea of *problem working*. Finding, formulating and exploring problems, finding solutions to challenging real world problems that do not have unique solutions, and communicating these are key foci fo creative thinking and action in **all** disciplines studied.

Terasa Amabile

We hardly ever pay attention to intrinsic motivation, which is the driving force that actually makes creativity happen….. It's absolutely crucial to set up a work environment that supports intrinsic motivation and supports people developing their talents. It should be an environment that's going to give people a good degree of autonomy.

Effective use of creativity is dependent on many other factors such as *passion/ hard work/mastery/focus/push /serving others/persistence*

6%   0%   13%   52%   29%

Strongly disagree   Disagree   Don't know   Agree   Strongly agree
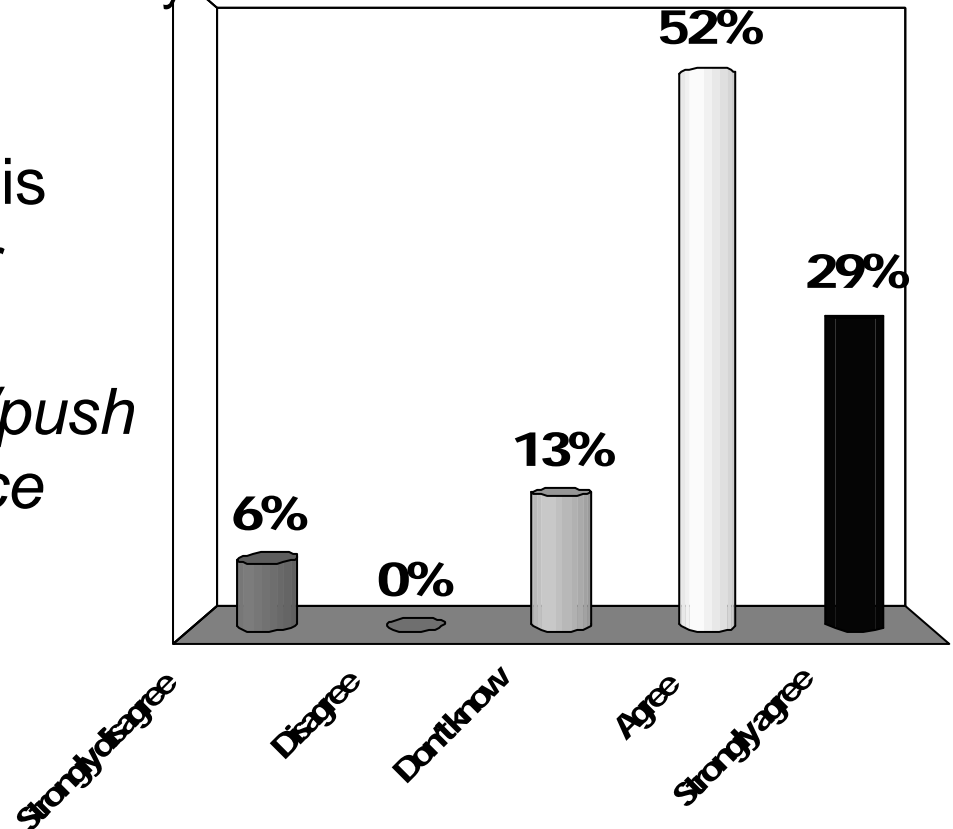
Representing the higher education curriculum

Ron Barnett and Kelly Coate (2005)
'Engaging the curriculum in HE'

Knowing

Acting

Being (self)

What sort of curriculum / what set of experiences will help learners' develop the knowledge, skills and dispositions that will enable and encourage them to be creative?

How do we help people learn to be creative?

'Learning to be' John Seely Brown (2003)

Learning about	**dimensions of knowledge (Polanyi)**	**Explicit**
Learning to be	*situational understanding*	**Tacit**

Learning to be involves learning the epistemology of social / professional practice (Raelin 2007 and Eraut 2005) embedded within which is knowing how to be creative in the contexts in which practice is enacted.

What sort of curriculum / what set of experiences will prepare people for the complexities of life?

LIFE LONG LEARNING

Academic

Practice

Co-curriculum

Care, wellbeing & social enterprise

Virtual worlds

Rest of life

LIFE WIDE LEARNING
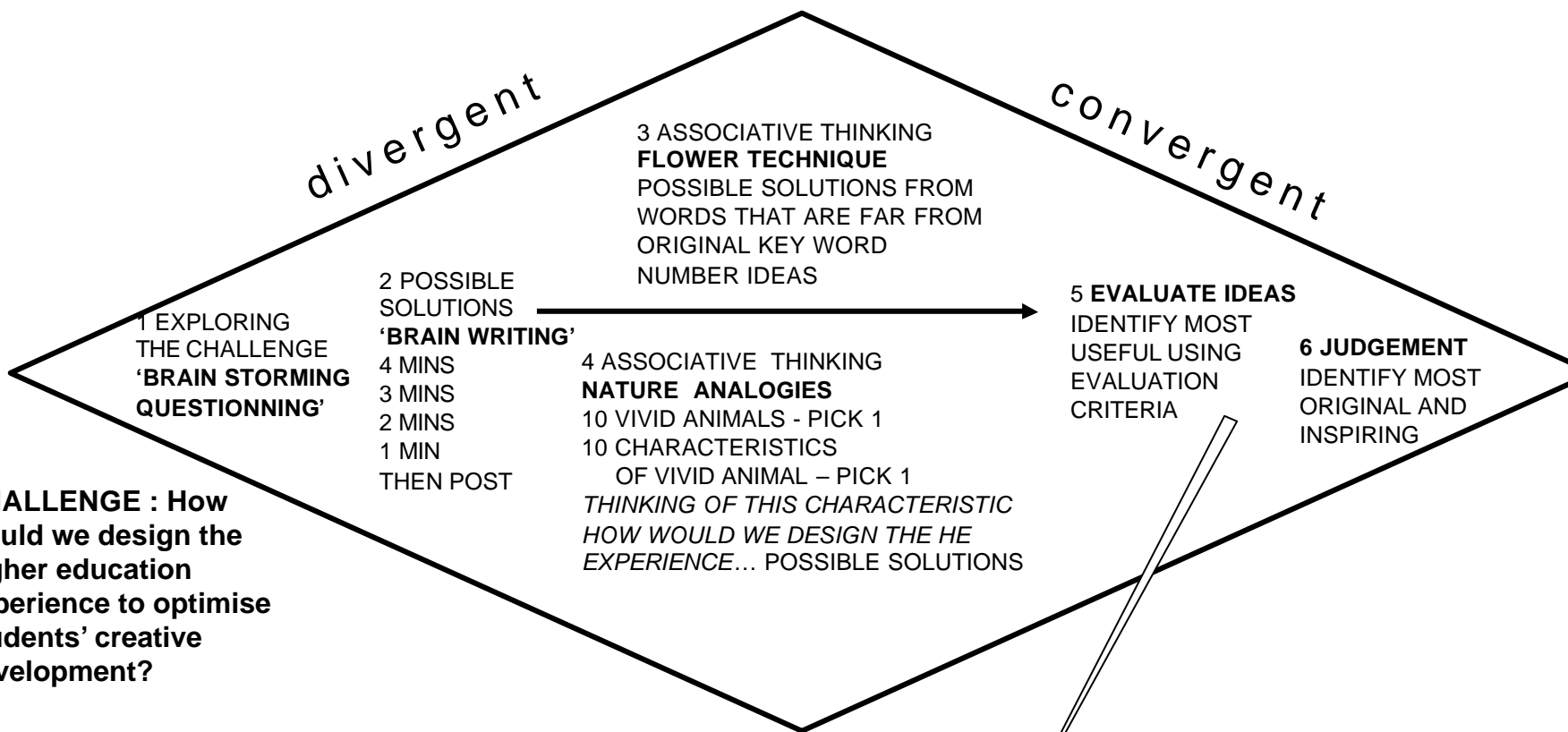
academic curriculum

Working with challenges (problems and opportunities): Rittel, Horst and Melvin Webber (1973) Dilemmas in a General Theory of Planning
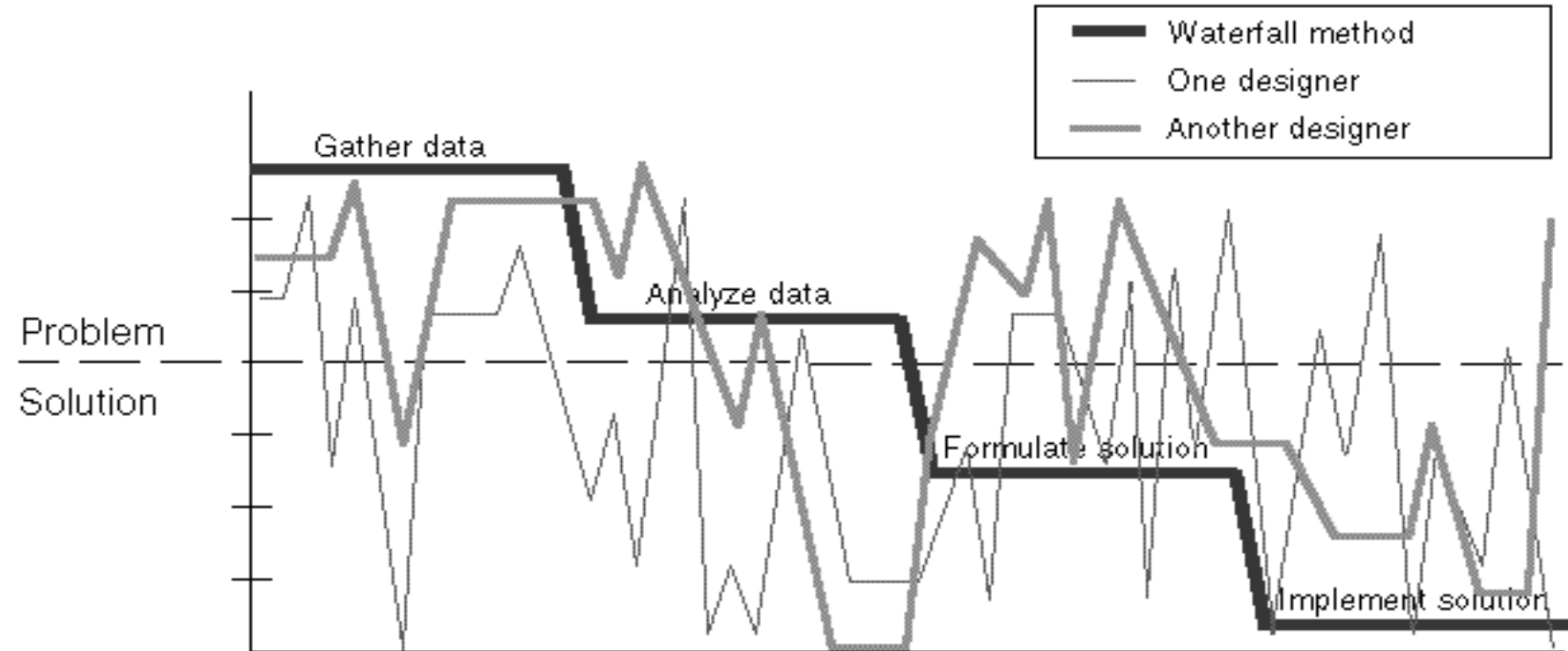
The seismic pattern reflects the way experienced people work with challenges at work: it reveals creativity in action

Facilitating creative thinking : generation and evaluation of ideas

divergent

convergent

3 ASSOCIATIVE THINKING
FLOWER TECHNIQUE
POSSIBLE SOLUTIONS FROM
WORDS THAT ARE FAR FROM
ORIGINAL KEY WORD
NUMBER IDEAS

2 POSSIBLE
SOLUTIONS
'BRAIN WRITING'
4 MINS
3 MINS
2 MINS
1 MIN
THEN POST

1 EXPLORING
THE CHALLENGE
**'BRAIN STORMING
QUESTIONNING'**

4 ASSOCIATIVE THINKING
NATURE ANALOGIES
10 VIVID ANIMALS - PICK 1
10 CHARACTERISTICS
   OF VIVID ANIMAL – PICK 1
*THINKING OF THIS CHARACTERISTIC
HOW WOULD WE DESIGN THE HE
EXPERIENCE*… POSSIBLE SOLUTIONS

5 **EVALUATE IDEAS**
IDENTIFY MOST
USEFUL USING
EVALUATION
CRITERIA

6 JUDGEMENT
IDENTIFY MOST
ORIGINAL AND
INSPIRING

**CHALLENGE : How
would we design the
higher education
experience to optimise
students' creative
development?**

EVALUATION CRITERIA

BLUE IDEAS
Few risks
High acceptability
Examples already exist that ca be copied
Would be easy to implement in this university

RED IDEAS
Innovative ideas
Breakthrough ideas
Exciting ideas
Risky ideas that will need selling
Could be implemented in this university

YELLOW IDEAS
Ideas for the future
They are not feasible or would be impossible
to implement in this university
Would need a radical change in
organisational thinking and behaviour

Pedagogy for creative practice John Cowan (2006)

Step 1: Induction into process: students consider
what creativity means in their disciplinary/ practice
field and prepare their own 'definitions' (provisional
understandings) of creativity and standards/targets
relating to their understandings of creative abilities.

Step 2: Learners engage reflectively in problem working that is likely to engage them
creatively and maintain a reflective journal that is formulated around questions about
their creative process.

Step 3: Learners take part regularly in group "crits", as practiced in architecture and
creative arts. They critically appraise work in progress and peers and tutors offer
reasoned and constructive judgements of that work.

Step 4: Throughout, learners are free to make any changes they wish to definitions,
statements of standards or personal aspirations – provided these are reasoned and
recorded in their journals.

Step 5: Learners assemble their self-evaluated portfolio containing their understandings
of and claims for creativity. The teacher reviews and endorses claims and judgements.
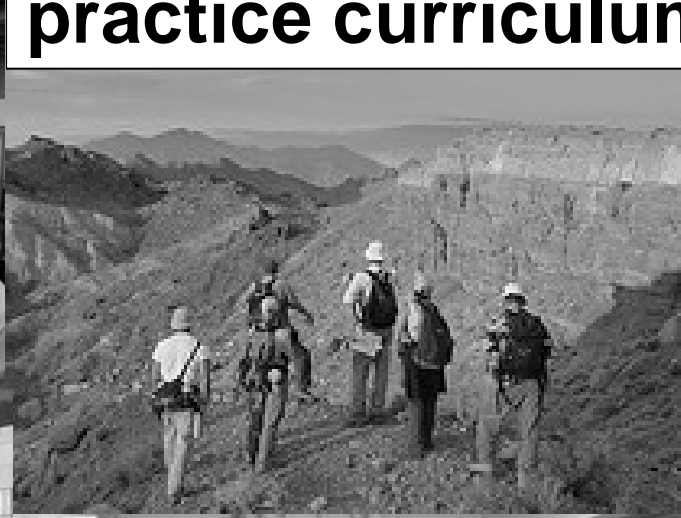
Understanding the epistemology of practice Michael Era

Where are the affordances for creativity?

- **Assessing situations** (sometimes briefly, sometimes involving a long process of investigation) and continuing to monitor their condition

- **Deciding what, if any, action to take**, both immediately and over a longer period (either on one's own or as a member of a team)

- **Pursuing an agreed course of action**, performing professional actions modifying, consulting and reassessing as and when necessary

- **Metacognitive monitoring** of oneself, people needing attention and the general progress of the case, problem, project or situation; and sometimes also learning through reflection on the experience.

Typology of learning in workplace settings during early stage development as a professional Michael Eraut

Work processes with learning as a by-product	Learning activities located within work processes	Learning processes at or near the workplace
Working with others	Asking questions	Being supervised
Tackling challenging tasks/roles	Consulting others	Being coached
Problem solving	Getting information	Being mentored
Trying things out	Finding resource people	Shadowing
Consolidating, extending and refining skills	Listening and observing	Site visits
Working with clients	Reflecting on action	Self-study
	Learning from mistakes	Training courses
	Giving and receiving feedback	
	Using mediating artefacts	

Modes of cognition in practice Michael Eraut

Type of process	Instant reflex	Rapid intuitive	Deliberative analytic	Slow intuitive
Assessment of the situation	Pattern recognition	Rapid interpretation	Prolonged diagnosis review, discussion and analysis	Associative or synthetic thinking
Decision making	Instant response	Intuitive	Deliberative analysis/discussion	Intuitive
Overt actions or scripts	Routinized action	Routines punctuated by rapid decisions	Planned actions with periodic progress reviews	Sudden insights after prolonged immersion
Meta-cognition	Situational awareness	Implicit monitoring Short reflections	Monitoring of thought and activity Reflective learning	Seeing /understanding something differently

Helping students on work placement to think creatively to solve relationship problems Peter Alcott (2008)

WHAT	HOW	WHY
What is the reality?	Take a look in the mirror	You have shortcomings too
What is at stake?	Have a good rant	Better out than in
What sort of person are you dealing with?	Talk to someone you trust	Understand why they are the way they are
What do you feel about the situation?	Disentangle your emotion	Strong feelings have no place in conflict resolution
What roles are people playing?	Examine their agendas	May reveal hidden truths
Can you both win?	Examine what each needs	Easier to resolve
What can you do?	List pros and cons of possible actions	For liberation and peace

The emphasis is very much on the student being able to resolve the issues for themselves using mentored reflection to visualise a creative way to deal with a difficult situation involving others

co-curriculum

A certificated programme of transferable skills training and experiential learning, offered by the University of York in partnership with leading public, private and voluntary sector organisations.

Students have to plan and pursue an active programme of personal development.

**The Art of Leadership
Assertiveness
The Big Deal
British Sign Language
Counselling Skills
Cracking the Case Study
Creative Industries
Discovering your future
Fast Forward to the Fast Stream
How to get to Yes
Interview Training
IT training for the workplace
Languages for All
Languages for Business
The Law of Ideas
Networking for beginners
Numbers at Work
Pizza, Paper, Profit
Preparing for the Workplace
Project Management
Putting Skills to Work
Skills for the Global Market
Social Entrepreneur
Team Development
Trial Sized Commerce
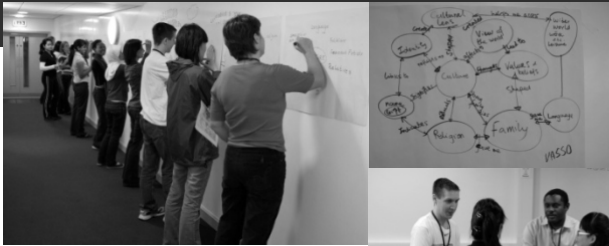Trial Sized Enterprise
York Enterprise Scheme**

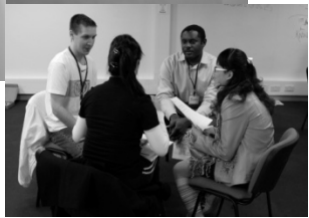# *Cultural Academy*
An enquiry-rich process

Cultural diversity is a fact of life especially at the University of Surrey with over 3000 originating from over 130 different countries. A higher education that aspires to prepare students f or the cultural complexities they will encounter in their professional and personal lives, must provide opportunity for learning through experiences of interacting and communicating with other cultures .

SCEPTrE
Surrey Centre for Excellence in Professional Training and Education

Enquiry-rich experience : Through a series of workshops, planning meetings and a conference, participants (students, facilitators and mentors) share their experiences and understandings of culture and its influences on their lives.

SUPPORT FOR LEARNING
• on-line social networking space to encourage sharing of experience
• wiki to support the production and sharing of knowledge
• mentoring scheme
• learning through experience award to value and recognise the learning

LEARNING PRACTICES
• telling stories about cultural experiences
• conversations about culture
• reflection on past experiences
• concept mapping
• tools to aid cultural enquiry
• proposition-testing using voting systems
• making a film about the campus as a multicultural society
• student teachers/facilitators
• mentoring
• student-led conference
• student-led research
• teacher- and student-evaluation

WORKSHOP 1
Sharing perceptions of the meanings of culture through a concept map.

Cultural gifts of food, music, art, poetry, language, symbols, clothes and images are an important part of the process of sharing cultures .
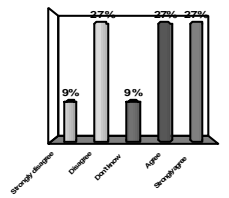

I don't feel I fit into any specific culture

1. Strongly disagree
2. Disagree
3. Don't know
4. Agree
5. Strongly agree

WORKSHOP 3
We need to be able to share our language and explore our understandings of culture in the organisations in which we work.

LEARNING THROUGH EXPERIENCE AWARD
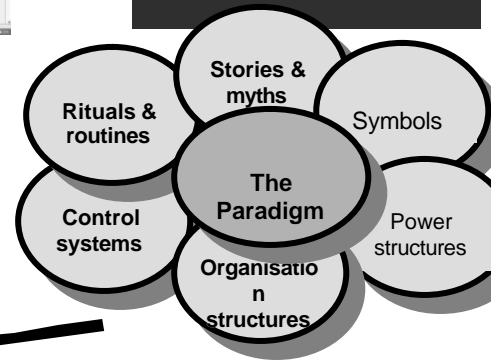6 students submitted an account of their experience and received the USSU Learning through Experience Award.

CONFERENCE
A student organised conference to engage the wider community and encourage the university to see the benefits of this approach to multicultural learning.

Students and staff participants evaluate the experience, co-write a conference paper and make a film about Cultural Academy

micro-conversation analysis

PLANNING MEETINGS / i-Festival

ON-LINE SURVEYS AND MAKING A FILM ABOUT 'OUR MULTICULTURAL CAMPUS'

The Paradigm
- Stories & myths
- Symbols
- Power structures
- Organisation structures
- Control systems
- Rituals & routines

care, wellbeing & social enterprise

Help on campus

Help in the community

Tutoring in schools

Caring for others

Second Life
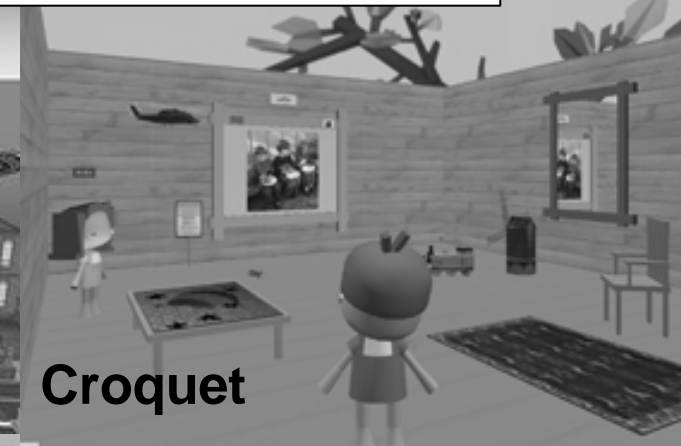
Croquet

Multiverse

World of War Craft

ProtoSphere

Running a

Shoshana Epsilon
Epsilon Photography

Weddings
Portraits
Fine Art

IM: Shoshana Eps

rest of life

travel

playing sport

family

raising money

looking after yourself

being sociable

being mum

part time work

Encouraging, recognising and valuing creativity embedded in formal and informal learning

Personal Development Planning – emphasis on learning through thinking ahead, planning, acting/improvising and reflecting on results

Supported by e-portfolios to facilitate recording of ideas, observations, experiences and reflective evaluation

Supported by thinking tools that encourage learners to think imaginatively and creatively about their situations

Supported by story writing and telling

Supported by facilitated conversation involving people who are interested in and value the creativity of others

Supported by 'Learning through Experience Award' to recognise and value creative enterprise within informal experience-based learning

What is experince ?

How do immersive experiences fit within experimental learning?

What is an immersive experience?

Posters

Making sense of immersive experiences

Conference evaluation and symbolic closure

IMMERSIVE EXPERIENCE

Feedback and feedforward

Immersive experiences in higher education

Immersive supper

Emergence of discussion top around the theme of immers

1

2

3

4

5

6

7

8

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