



Making space for creativity

Edited by
Paul Martin



University of Brighton

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COVER PHOTO:
THE BRIGHTON CREATIVITY
CENTRE IN ACTION

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List of abbreviations

AV	Audio Visual
CAD	Computer Aided Design
CDF	Creativity Development Fund sponsored by InQbate
CETL	Centre for Excellence in Teaching and Learning
FE	Further Education
GCSE	General Certificate in Secondary Education
HE	Higher Education
HEA	The Higher Education Academy
HEFCE	The Higher Education Funding Council for England
InQbate	The name of the CETL in Creativity
IT	Information Technology
ICT	Digital Information and Communication Technology
JISC	Joint Information Systems Committee
MA	Master of Arts qualification
MSc	Master of Science qualification
OFSTED	Office for Standards in Education
RAE	Research Assessment Exercise
UK	United Kingdom
UNESCO	United Nations Educational Scientific and Cultural Organization

Contributors

Richard Morris MBA, BSc, I.Eng, MIED

Richard is the Assistant Director of InQbate, heading the Brighton Creativity Centre which forms the University of Brighton's contribution to the project. He trained in Engineering Product Design at the Polytechnic of the South Bank before working as a designer in Australia and London on a variety of projects ranging from light fittings and cooker hoods to point of sale fixtures and train seating. He later worked as a trouble shooter for GEC Alsthom Turbine Generators, aiding the solving of engineering and management problems arising during the construction of the Guandong Nuclear Power Station. On completion of a master's degree in Business Administration, he ran his own business for 7 years, and worked with new business start-ups in sustainability and crafts. He joined the University of Brighton in 1998 and leads the portfolio of Product Design courses. The courses are well respected for their ability to generate creative but practical solutions for commerce and industry.

Contact Richard at r.d.morris@brighton.ac.uk

Dr Paul Martin PhD, MSc, PGCEA, BA, Dip.Env.Ad.

Paul is the academic manager for the Creativity Centre providing academic leadership in supporting and researching creative activities within the Centre. He has worked in the field of adult learning for many years. Alongside this he has managed several Adult and Continuing Education Centres developing access routes into higher education, co-authored and led a degree in fine art and has taught management development. Paul worked for HEFCE supporting the development of national learning and teaching projects and was a Senior Advisor for the Higher Education Academy. He is a practicing artist and a founder member of the Brighton and Worthing Open House movement where he shows his work regularly.

Contact Paul at p.r.martin@brighton.ac.uk or see his artwork at www.martinstudios.co.uk

Steve Kilgallon MSc, BSc, PGCE.

After obtaining a degree in Applied Physics and Maths from Manchester, Steve went on to receive an MSc in microwaves and opto-electronics from University College London. During this time he became interested in the educational process which led him to completing a PGCE and becoming a teacher of physics and maths. After several years teaching he became head of physics at a sixth form college in London. As a teacher he became interested in how technology could be used to enhance the teaching and learning processes, which led him to work in the school of computing at the University of Brighton. Currently he is working as an Educational and Technology Facilitator within the Creativity Centre at the University of Brighton where he works with students and lecturers to explore and develop new and creative learning experiences. His research interests include evaluating how technology is introduced and used in teaching and learning.

Contact Steve at s.kilgallon@brighton.ac.uk

Dr Angela Rogers PhD. MA BA.

Angela is the Research Fellow at the Creativity Centre with a remit for expanding its work across the university. As an artist, educator and researcher in the fields of art and design and personal and professional development, she has worked in a range of roles at the University of Portsmouth, Kingston University, the Arts Council of England and Creative Partnerships. She has introduced her Drawing Encounter methods to academic audiences in the UK and Europe and she is currently working on a travelogue that uses drawing as means to meet strangers on trains. Her own research is concerned with the role of visual arts practices in learning and teaching with a particular emphasis on creative collaboration.

Contact Angela at drawingdialogue@gmx.com

Dr Jon Rimmer

Jon is a User-Experience Researcher within both industry and academia. He has been a lecturer and researcher at UCL, City University and the University of Sussex working in the areas of psychology, technology and design. He has consulted on a large number of commercial projects and clients include Microsoft, Amazon, Channel 4, BT, HEFCE and various Government bodies. His work for InQbate evaluated the use of the project's resources and his own research examines the migration from the physical into the digital environment within our social and working lives.

Contact Jon at mewhenhome@gmail.com

Dr Vivien Martin PhD, MBA, MSc, BA, Dip.AD, ATC.

Viv is an artist/educator who works in management and professional development in the University of Brighton. Her work has included a wide range of development initiatives in adult learning, both in educational institutions and in public services. She is the author of a number of books and materials on management, leadership and project management.

Contact Viv at v.f.martin@brighton.ac.uk and see her artwork at www.martinstudios.co.uk

Overview

Paul Martin

'Making Space for Creativity' is the story of a journey...

This book is based on the experience of and research by the staff, students and wider education and business community who have engaged with the activities of the University of Brighton's 'Creativity Centre' during the past five years.

It does not offer a series of answers but rather an accumulation of thoughts, ideas, observations, practical methods, suggestions and questions from a lived experience.

Overview of the chapters in this book

Section I

Chapter 1 – In the beginning: an introduction to the Creativity Centre and its education and research philosophies – *introduces the University of Brighton's Creativity Centre and its part in InQbate, the CETL in Creativity. It explains the educational philosophy of the Creativity Centre, and its engagement with teachers and learners in the Centre and the wider community. It also covers the Centre's research philosophy, aims and methods.*

Section II – Theoretical perspectives on creativity in Higher Education

Chapter 2 – What is the Purpose of Higher Education? – *starts with a brief overview of Higher Education in the 21st century then introduces issues surrounding creativity in the context of HE. It explores the potential purposes of Higher Education in modern society and raises tensions and choices for educators arising from the conflicting pressures of creativity and conformity.*

Chapter 3 – Troublesome Creativity – *explores the concept of creativity through discussing a short history of creativity and asking the question, what is creativity? It looks at types of creativity and creative processes and poses the idea of creativity as a meaning making process.*

Chapter 4 – What are Creative Spaces? – *reviews some of the existing literature on learning spaces then introduces different concepts of learning and creative spaces, including physical space, psychological space, virtual space, biological space and interpersonal space.*

Section III – Putting creativity into practice

Chapter 5 – Imagining better ways of working – *explores ways in which you can introduce creativity into your life in both work and social settings. It introduces the concept of developing a vision and through practical processes of creative visioning demonstrates ways, in which you can build your own vision, reconcile alternative visions and commit to your vision.*

Chapter 6 – Drawing the spaces between us: using drawing encounters to explore social interaction – *describes the use of drawing in encounters as an alternative process of communication to that of speech. It documents the process and participants' reactions and feelings to the experience. It also proposes possibilities for its future use in building community and supporting collaborative innovation.*

Chapter 7 – Creativity in teaching and learning: a case study – *describes one tutor's experience in attempting a more creative and learner centred approach to delivering a Professional Practice module, using the full resources of the Creativity Centre's spaces and technology.*

Chapter 8 – Practical approaches to creativity – *offers a variety of suggestions for ways of working with your students that will give them a chance to develop and trust their creativity. It introduces the concept of experiential learning through a variety of practical workshop activities including theme bases, ways of exploring literature and the use of metaphor and colour.*

Section IV – The Creativity Centre Project

Chapter 9 – Designing a Creative Learning Space – *explores the design process of the Creativity Centre at the University of Brighton and the issues of developing and keeping the vision amongst the competing priorities of educators, designers, architects, estates, builders and technology specialists.*

Chapter 10 – The Brighton Creativity Centre: Space, technology and contents – *describes the spaces that make up Creativity Centre including all the technology, equipment, furniture and other contents with comments on their usage, usefulness and effectiveness in relation to learning and teaching.*

Chapter 11 – Our Experience of Technology within the Creativity Centre – *explores the concept of the Centre and the envisioned place of technology within it. It describes the systems including the complex switchable input and projection system, coloured lighting, sound system etc., and the issues arising from their complexity for usability by teachers and learners alike.*

Chapter 12 – The Creativity Centre: what worked and why – *explores the effects on creativity and learning and teaching of the Centre's spaces, flexible layout using moveable and write-on-able walls, environmental controls, range of lightweight chairs, tables and bean bags and the whole panoply of technology. It introduces concepts of newness, novelty, difference and openness, flexibility and atmosphere. It explores the effects on the learner/teacher relationship, what kind of learning and teaching the Creativity Centre enables and does not enable.*

Chapter 13 – The Creativity Development Fund – *explains the rationale for setting up the fund, gives examples of some of the great variety projects which were funded and their outcomes, and discusses the experiences for the participating staff and the unexpected benefits for them in terms of research and links with the wider creative education community.*

Chapter 14 – The Creativity Fellowships – *relates the concept behind the funding of the fellowships and the bid process. It gives a brief summary of each of the Fellowships including their discipline area, project aims and main outcomes and finally reflects on the wider learning from the process for the Creative Fellows and their communities.*

Chapter 15 – Teachers' conceptions of creativity – *discusses the outcomes of initial research into conceptions of creativity in relation to tutors and their discipline, their teaching and their student's learning. The research focussed on teachers delivering courses that led to professional qualifications in disciplines not generally associated with creativity, including general nursing, mental health nursing, midwifery and pharmacy.*

Section V – Findings and reflections

Chapter 16 – Summary of findings for designers, architects, estates departments, builders and other specialist suppliers

Chapter 17 – Summary of findings for academic leaders, managers and administrators

Chapter 18 – Summary of findings for teachers, tutors and facilitators

Chapter 19 – Giving birth to a dancing star – *is a postscript to the book which pulls together and comments on some of the key ideas presented. It also challenges educators, academic leaders and designer/architects to adopt new learning and teaching philosophies and to create new spaces which reflect 21st century learners' complex needs in a rapidly changing society.*

Echoes – a collection of observations from Centre staff and users

How you approach this book will depend on your particular interests:

- If you are an academic leader, manager or administrator you may be particularly interested in chapters 2, 3, 4, 9, 10, 11, 12, 13, 14, and 17.
- If you are a teacher or facilitator interested in creative approaches to learning and teaching you may be interested in chapters 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 15 and 18
- If you are designing or building new learning and creative spaces you may be interested in chapters 2, 3, 4, 9, 10, 11, 12 and 16.

Useful resources from the Creativity Centre

An electronic copy of this book 'Making Space for Creativity' along with a film of the same title may be freely accessed from the Creativity Centre website, including all the papers written by the Centre staff over the last three years.

www.brighton.ac.uk/creativity

We hope that you will find it interesting, useful and thought provoking.

Paul Martin

Acknowledgements

Many people have helped us, directly and indirectly, in making the University of Brighton Creativity Centre a success. These range from the teams who wrote the original CETL bid, and designed and built the Centre, to those staff, students and wider users who have joined with us in exploring the spaces potential and the wider aspects of creativity in learning, teaching and the creative process.

Our thanks then, go to the following:

- The learning space design team including particularly Stefano Santilli, Tim Katz, Derek Covill and Gareth Reast.
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- The supporting teams at the university including, amongst the many, Roy Harle, Stan Stanier, Dave Rickard, David White, and Bob Cook and Karen McCluskey and their colleagues in Finance.
- Our technician and administrative friends and colleagues who have helped with our many problems over the years including Dave Burton, Mike Standen, David Stansbury, Trevor Bowyer, Trevor Taylor, Gary Morgan, Linda Hart, Carol Bill, and our indefatigable cleaners Sheila Emsley and Lyn Stevens.
- The management teams including Stuart Laing, Andrew Lloyd and Callum Firth.
- The University of Brighton Creativity Centre team including Richard Morris, Paul Martin, Angela Rogers, Steve Kilgallon, Pauline Ridley and Linda Barber.
- The University of Sussex Creativity Zone team including Peter Childs, Tom Hamilton, Diane Brewster, Gill Johnston, Katy Howland, Eric Harris, Sue Orton, Claire Hodgkiss and Tamara Violaris
- Finally, and most importantly, all of the University of Brighton students and staff who have helped with and taken part in the creativity project, especially the product design students. You know who you all are!

Section I

Introduction

Chapter 1

In the beginning: an introduction to the Creativity Centre and its education and research philosophies

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

'One of the most moral acts is to create a space in which life can move forward.'
Robert Pirsig

Introduction

In the beginning was an idea which became the creative project that is the University of Brighton's 'Creativity Centre' and which has been a voyage of discovery and change for all who have taken part. This chapter explains the origins of the Centre as part of 'InQbate' (the CETL in Creativity) and the context of its development. It then describes the aims of the Creativity Centre, the education philosophy, the range of users, and how its staff have engaged both users of the space and the wider creative community. It concludes by discussing the research philosophy and the methods employed.

ENGAGING USERS
IN THE SPACE



InQbate, the CETL in Creativity

The University of Brighton's 'Creativity Centre' is one half of a project called 'InQbate', the Centre of Excellence in Teaching and Learning (CETL) in Creativity. The Universities of Brighton and Sussex have worked in partnership since March 2005 in this joint project which was funded by the Higher Education Funding Council of England (HEFCE). There was initial capital funding of two million pounds for the creation of two Creativity Zones, one in each of the partner institutions, along with £350,000 annual recurrent funding for five years to cover staffing, research and other project work. InQbate's initial focus was on creativity; how to encourage it, and how to use it to transform our teaching and learning.

The Context of the CETL in Creativity

The idea for developing technology rich 'creative spaces' arose against a background of rapid social and technological change within society. An 'elite to mass' change in the numbers of people entering higher education over the past fifty years had been driven by ideals of both creating a fairer society and increasing capital for the nation's economy. During the same time successive UK governments saw the development of the 'knowledge economy' through

education, technology and creativity as a way of developing and sustaining the country's economic wellbeing in the face of turbulent global market forces.

In response to these pressures, higher education institutions have put in place a variety of strategies, including the development of new learning technologies, the development and adoption of new pedagogic approaches to deal with greater student numbers, new technologies, creative imperatives and the modernising of learning and teaching environments to support these changes.

The idea that special spaces could support and encourage learning and creativity was therefore very pertinent to the prevailing socio-economic and education trends. Although there was much anecdotal evidence from education practitioners that learning spaces can affect the learning process, there was surprisingly little hard evidence at the beginning of this project to support the premise that improvements in the learning environment led to improvements in learning or creativity. (see chapter 4 for details)

The University of Brighton's Creativity Centre

It was against this background of uncertain evidence but strong insights and hunches that the Creativity Centre team, like its sister centre in Sussex, set out to explore and research the field. The overall project began with the launch of a series of creative projects paid for through the InQbate Creativity Development Fund (see chapter 13) and the design and building of two technologically enhanced and flexible spaces, one in each partner university, in which to put theories to the test. After a two year planning and build stage, both centres were formally opened in March 2007 with launch parties in both sites and a ceremonial cutting of the InQbate cake by the two Vice Chancellors.

Although the Brighton and Sussex teams share similar aims and vision, the differences in the physical spaces, the experience of the teams and the institutional cultures meant that the two centres quickly developed very different creative spaces and philosophies of engagement.

From the beginning the Brighton Creativity Centre team adopted a co-enquirer rather than expert approach. We made an open offer to all within the university across all disciplines, academic and administrative departments, management, students and business contacts to come and explore the concept of creativity within the new 'creative space'.

To this end the Brighton Creativity Centre developed a broad vision;

- To explore and enhance creativity in learning
- To explore and enhance creativity in the facilitation of learning
- To explore and enhance knowledge and practice in the creative process

The project started a voyage of discovery into the question, "What is creativity?" and also which environment, technology and learning and teaching approaches best support the creative process. It was originally thought that much of the CETL's work would be focussed broadly across creativity throughout the universities, through such initiatives as CDF projects and our Creativity Fellowships to encourage research and develop creative communities (see chapters 13 & 14). However the Brighton team's range of work became quickly focussed on the physical Creativity Centre, due largely to the sheer amount of time and effort required to develop and run it effectively.

Putting learning and creativity first: The educational philosophy of the Creativity Centre

The work of the Brighton Creativity Centre was carried out by a small team consisting of a part-time director Richard Morris, a full time academic Paul Martin, and a technician Steve Kilgallon, with a researcher Angela Rogers and administrator Linda Barber, joining after the first eighteen months. Their combined skills and educational experience ranged from work in industry to teaching and managing in schools, adult, further and higher education and across

a variety of subjects from science, engineering and product design to fine art, management development and teacher development. This wide range of experience, plus a shared philosophy of teaching as a facilitative, learner centred and emancipatory process, meant that they were well placed to actively encourage the wide range of users to develop themselves and explore their creativity. As the chapters on creativity attest, risk and transformation are at the heart of the creative process. It has been our role to challenge and support teachers and learners alike to engage in the risky process of becoming.

Learning is a fundamental process in the human being's journey to fulfil his or her potential through continually becoming, but learning is also underpinned by different concepts of purpose which, in formal systems, can relate to ideas of control, inculcation and conformity. Jarvis observes that, "there is a profound difference between knowing and having knowledge. It is the difference between actively participating in the process of creating knowledge, on the one hand, and on the other hand digesting whatever others transmit" (Jarvis, 1992, 148). In this first sense, knowledge, its creation and recreation, is part of a transformative process of development and change for the individual and society. In the second sense, knowledge is like a commodity; it is fixed, non-developmental, non-reflective, an object of acquisition and a process of control and the reproduction of existing power structures.

As the creative process is about making new meanings, it is this sense of creating knowledge anew (in what Jarvis calls the 'being' and 'becoming' modes) with individuals and groups, which has been at the heart of the Creativity Centre's engagement with teachers and learners. We have challenged people to engage in a creative and therefore transformative process in order to help them create new knowledge and meaning both individually and in communities of learning.

A significant barrier to learning is the extent to which established perceptions, values, beliefs and processes, can filter and block people's ability to transform their understanding of the world in which they live. If transformative learning is seen as the process of continually transforming perceptions through reflection, then challenging existing frameworks, or at least suspending them, becomes a necessary part of the learning process, if new meaning is to be made. Therefore it is necessary, in order to learn anew, for people to critically examine their constructs and be prepared to set them aside and look at things afresh.

The physicist David Bohm (1992), like the philosopher Krishnamurti (1991) were aware that the process of thought, in its dependence on existing perceptions and constructs, often acts as a process for the maintenance of the status quo rather than as a process for the possibility of change. As Mezirow observed, "approved ways of seeing and understanding, shaped by our language, culture, and personal experience, collaborate to set limits to our future learning". (Mezirow, 1991, 1) As Mezirow points out, there is a tendency for individuals to filter new experiences through existing structures and in order to 'avoid anxiety' or conform to peer group expectations, merely reinforce existing constructs. It is the choice of the individual to risk the possibility of change or not to risk change which is central to their capacity to learn in a potentially creative and transforming way.

Mezirow sees the fostering of critical self-reflection within a challenging and supportive environment as the way of helping those who are ready to transform their meaning perspectives. This has been the touchstone of our approach in the Creativity Centre.

Engaging teacher/facilitators and learners in the Creativity Centre and the wider community

Given our espoused aims and personal philosophies of learning and human development, we, as a team and from early days in the centre, determined that we would not set ourselves up as the experts on learning and teaching in the space. Even though many users wanted us to take that role, we have tried to work with people as co-inquirers and explore each new request as a voyage of discovery. It would have been easy (and suited some user's wishes

not to engage with the possibilities) to use our acquired expertise to meet different proposals with a series of default room layouts and workshop techniques. This would in some ways have made life easier for us as a team and would have been convenient for many users who were short of time to plan or experiment. We and they however would have missed out on the diversity and richness of possibilities and outcomes generated by our process of engagement.

We have, as much as possible, treated the Creativity Centre as a creative experiment in learning spaces and teaching and learning approaches and acted as co-researchers in those experiments.

Who used the Creativity Centre?

During the first 6 months of use from March to August 2007, there were 50 events in the centre with nearly 1,000 participants, ranging from 2 hour to whole day sessions using one or both spaces. The use of the Centre was comparatively light during this period because its staff needed to troubleshoot the new technology and become familiar with the Centre's equipment.

After this initial stage the use of the Creativity Centre grew rapidly as people became more aware of our existence and what we had to offer. In the last three years, over 11,400 people have attended more than 672 events in the centre from one-off workshops and course modules, to conferences, and exhibitions. Most events were run during week days from 8.30am to 5 or 6pm but many have involved evenings and the occasional Saturday opening.

Early adopters included the Knowledge Transfer Unit, the Collaborative Training Centre and BePurple (a student enterprise initiative) all working to promote business and links with the outside community. The range of users and events soon expanded and included for example, ELGG JAM, a community network blogging conference, the university's own sustainability and pedagogic research conferences, two sand pit events to develop research proposals run by the school of Pharmacy and Brighton and Sussex Medical School and a day to generate ideas for new on-line games for a software company. The Centre for Learning and Teaching, Sussex Learning Network and Creative Partnerships have all run a number of learning and e-learning workshops. The student union, finance and other university departments have run planning and staff development sessions. There have been student exhibitions, a variety of presentations and prize giving and the Centre staff have run open creativity days for the university.

After an initial range of one-off events, we gradually managed to encourage ongoing use by staff and students from disciplines as diverse as education, product design, creative writing, pharmacy, engineering and computing. This more long lived engagement with courses has enabled a richer and more rewarding research process.

The overall response to the Creativity Centre's offer has been a positive one although the university's split sites have meant that the majority of users have been from the Moulsecoomb location where the Centre is based. It may also be that the nature of the creative space on offer is not really relevant to some disciplines, such as art and design who may want workshop/studio space with a hard floor where they

The research philosophy of the Creativity Centre

Our research philosophy is based on an interpretivist constructivist paradigm, a lens which Schwandt sees as most appropriate when one's goal is, "understanding the meaning of social phenomena", such as learning, teaching and creativity. (Schwandt in Denzin & Lincoln, 1994, 119)

It should be acknowledged that this research brings together a range of disciplines and fields of study and practice which each have their own language and traditions of research based on

their often diverse ontological and epistemological beliefs. There is an inherent danger in this type of interdisciplinary research, which crosses disciplinary boundaries, that the researcher can be accused of being a dilettante, of lacking a depth of understanding in any one area. This danger has to be acknowledged, and is addressed in our research by triangulation using a wide variety of research methods. However, in researching the meaning making activities of people in a social setting, if one adheres to the constructivist paradigm then the multi-viewpoint multi-disciplinary approach of Denzin's and Lincoln's (1994) 'bricoleur' becomes a necessary attribute of the researcher and the research process. In this we have embraced the celebration of the richness possible when engaging in a multi-faceted, multi-perspective setting.

Though this is not collaborative research in the strict sense employed by Reason and Rowan (1991), it does intend and attempt to engage participants as much as possible in the process of meaning making, recognising their contribution to the research process and honouring their professional integrity, humanity and vision.

Research aims and methods – not defining but exploring

Just as the Centre team quickly realized that it was not either possible or useful to try and define creativity, we recognised that the complexity surrounding creativity across learning, teaching and the creative process meant that our research methods needed to reflect the nature of the phenomena. Although much of our research has focussed on the use of our 'creative space', we have also engaged in research with and through the Creativity Development Fund (CDF) projects and Creativity Fellowships as well as a variety of creative workshops.

Without *a priori* theorising the project team have tried to find out in what ways the flexible and technologically rich spaces can affect learning and teaching, and whether and to what extent the spaces encourage creativity from teachers and learners.

In using the Creativity Centre as a kind of laboratory, there is a danger that notions of creativity, teaching and learning are only discussed in terms of the physical space. As discussed in chapter 4, a 'creative space' can also be conceptualised as a 'virtual space', a 'personal or internal psychological space' an 'interpersonal space' and even a neurological space. Using technology, a virtual space can extend from individuals and groups in the same or adjacent rooms, through the rest of the institution and its locality to the wider community and the worldwide web. A personal or internal psychological space is a combination of emotions, thoughts and beliefs, shaped by a learner's or teacher's life experiences that they bring to any learning situation. The interactions between these create an interpersonal space or social space. The implications of inter-personal learning spaces are important partly because much effective learning takes place as a result of interactions between students themselves (Kuh et al., 2005:206) cited in Temple, 2007:28). A contemporary creative learning space will surely be a dynamic combination of all of these – the physical, virtual, personal and interpersonal. The breadth of the Centre's aims the complexity of the elements within the learning spaces and their huge potential to encourage and support learning, teaching and creativity have made it difficult to formulate the research questions. We have however, broadly tried to find out to what degree the flexible, technologically rich space effects and enables creativity in learning, the facilitation of that learning and creative processes. Also, why and to what degree the space encourages creativity in teachers and learners.

Many of the users of the creativity centre have been self selecting. Nevertheless, they have come from across the university's faculties and included academics, students, administrators and business links. We also recognise that the philosophy, interests and skills of the centre staff, working with and supporting activities within the centre, have inevitably affected its development and outcomes.

The wide range of variables covering the flexible space, technology and the very complex natures of learning, teaching and creativity makes research difficult but we have compensated by using triangulation. The range of research methods includes pedagogic evaluations from

users, learner's feedback, interviews with a range of users, statistics of use, participant and non participant observations, and observations of Centre staff whilst supporting, observing and partaking in events.

The HEA Learning Spaces report (2007), argues that 'it is impossible to make meaningful and direct correlations between new spaces, technology and approaches to teaching and learning with outcomes'. We feel, however that the careful scrutiny of the rich and varied qualitative data gathered by the our research can give meaningful indications of benefit to teachers, facilitators, learners, participants, educationalists, education managers, designers of learning spaces and estates departments.

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Section II

Theoretical perspectives on creativity in Higher Education

The chapters in this section explore the complex nature of creativity and the issues it raises in HE when the forces of risk, ambiguity, difference, challenge, change and making new meaning are released by the creative process into institutional structures which rely on a level of conformity in order to function and maintain accepted standards. It also begins to explore the notion of creative space as encompassing not only the physical but also psychological, virtual and neurological spaces which we inhabit as developing beings.

Chapter 2

What is the purpose of Higher Education?

Paul Martin

Is it possible to learn and teach creativity in contemporary Higher Education?

Higher Education in the 21st century

Over the last fifty years in the United Kingdom, there has been an 'elite to mass' change in the numbers of people entering Higher Education (Barnett, 1994) driven by the twin ideals of creating a fairer society and increasing capital for the economy. This has created pressures for change in Learning and Teaching in Higher Education (HE) which are many and varied including; increased student numbers through a widening participation agenda (with a greater diversity of backgrounds and learning needs), the increasing speed of change in knowledge, government calls for greater efficiency and relevance to economic needs, and development and convergence of technologies. Alongside this, socio-economic changes and influences have led to the increasing commodification of HE which has created its own financial and ethical pressures.

The response by HE to the variety of pressures facing it has been wide ranging. There has been a huge building programme to modernise learning spaces and house the larger student numbers. There has been a drive to update technology and an increase in the use of technology encompassing e-learning and Web2 to support the learning process. This has necessitated a matching training programme for HE staff to update on the use of technology for both teaching and research. The rise in student numbers, drive to recruit foreign students and the widening participation agenda has given rise to many learners from non-traditional backgrounds and has led to the development of comprehensive learner support systems.

Given increasing knowledge of the learning process, the traditional teacher centred, transmission model of learning adopted by the 'sage on the stage' (McWilliam, 2007) has gradually begun to change to a more facilitative approach to teaching that is learner centred and where the teacher becomes the 'guide on the side'. Barr and Tagg (1995) see this shift from an 'instructional' to a 'learning' paradigm as changing the role of HE from a 'place of instruction' to a place to 'produce learning'. Given a greater democracy in learning Erica McWilliam (2007) suggests that the teacher can become the 'meddler in the middle' or even the co-creator of new meaning making. In this situation the teacher/facilitator brings his or her knowledge and process to the forum of learning along with the students and they all share in the learning process.

There are, however, strong counter pressures to this approach to learning. The managerialist and accountancy led view of education tends to support the apparent efficiency of the 'telling' mode where lecturing to large numbers has obvious simplistic financial benefits. The commodification of Higher Education, the learner and learning also challenges the learner centred approach. This arguably changes the learner's perception of the learning contract from an active engagement with learning to the passive purchase of a qualification in the Higher Education market place, which can then be traded for a good or better job. Whilst it should be recognised that issues of motivation for learning are complex and many learners

will display varying degrees of each of the two paradigms discussed above, there is an underlying paradox for learners and teachers alike. Pressures for status quo in the socio-economic structures, the training needs of the economy, the commodification of learning and the learner and adherence to traditional teaching methods that retain the power of the teacher, all support the passive receptor model of the learner who can then only learn that which is known. This historical model of performance, though much loved by traditionalists, singularly fails to prepare learners for a life of change.

Creativity in the context of Higher Education

Creativity as a concept and process has gradually been demystified, attained greater definitional clarity and been detached from individual genius. McWilliam and Haukka (2008) argue that it has become '...economically valuable, team or community or organisation based, observable and learnable'. They see the challenge which creativity poses to 'orthodox teaching and learning' as difficult for educators to ignore. There are indeed many pressures for the inclusion of creativity in HE. Business and government understand the benefits of creativity to the economy and society as a whole but often only want the controlled outcomes and not the questioning and potential destabilising energies released within organisations as the creative process is unleashed. HE management also widely supports the idea of creativity in teaching and learning but it is when educationalists try to introduce it into the curriculum that inherent conflicts begin to emerge.

As Clouder, Oliver and Tait (2008) state, there has developed in Higher Education a performance oriented culture which can be seen to be at odds with a creativity infused environment. Dweck's (1999) research with young learners found that their performance goals were focussed around 'winning positive judgement of... competence and avoiding negative ones' while their learning goals showed a will to develop 'new skills, master new tasks or understand new things' (Dweck, 1999, p15). She found that most learners had both sets of goals in an approximate 50/50 ratio and that their propensity to develop or reduce these goals was open to external influence. As McWilliam and Haukka point out, the best processes to help people learn often have elements of risk and confusion. This more transformative approach to learning is what Jarvis (1992) sees as actively engaging in the creation of knowledge which may, as Martin (2002) says, may be uncomfortable for the learner and the teacher alike. Within HE, the performance culture is encouraging the primacy of performance goals leading to a culture of safety and knowledge transmission and this is being reinforced by the pressures from the commodification of education raised earlier.

Even if an individual teacher or course team may wish to use creative approaches to learning or engage learners with creative processes, disciplinary traditions, curriculum design, external professional bodies, assessment methods, restrictive learning spaces and high student to staff ratios may conspire against their efforts. Some disciplines are seen as naturally creative, such as fine art or design, whereas others such as engineering are not, though there are many examples of uncreative art and creative engineering to disprove these unhelpful generalisations. Some disciplines however, have at their core a large knowledge base which is seen as a necessary foundation of learning before students can venture into any thinking or creative activities of their own. Packed, knowledge based degrees with external professional validation bodies can often lead to restrictive curricula and a reliance on the tell mode of teaching, though recent developments in medical education have demonstrated that this need not be so.

The drive to introduce and develop creativity in teaching and learning in HE can therefore be seen to be conflicted with the sector's growing managerialist and performance culture, some discipline and professional body traditions and philosophies, curriculum design, conservative teaching approaches and non flexible teaching spaces. Though creativity is recognised as important, its very nature involves risk and challenge to the status quo and established systems. The pressures for both staff and students to adhere to the requirements of existing structures, methodologies and processes of knowledge transfer can be overpowering and stifle engagement in creative learning, meaning making and discovery.

At a learning and teaching conference workshop, I asked the 40 HE and FE tutors present what they saw as barriers to creativity. Answers included; an environment of 'innate conservatism', 'cultural restraint', the drive for 'efficiency' and 'the education system'. I replied to the latter, 'what all of it?' and the room rang with a resounding 'YES'.

The purpose of Higher Education

For the educator, there is a philosophical dilemma which underlies the often conflicting pressures for creativity and change in HE. If, as Jarvis (1992) states education is 'frequently regarded as a humanistic process', then this is in conflict when '...the very nature of society in which education occurs emphasises the 'having' mode and expects repetitive action and non-reflective learning so that it can produce people who can rehearse what they have acquired'. This view is reflected in Feinberg's (cited by Carr in Wellington, 1993) two paradigms of the social function of education. In the first he sees education as mainly economic and vocational and concerned mainly with '...the transmission of technically exploitable knowledge'. In the second he sees education as mainly political and cultural and intended to '...further social participation... through the development of interpretive understanding...'

Nussbaum sees the two philosophical agendas underlying modern liberal education as similar to those in ancient Rome. The endemic older model dominant in Seneca's Rome, was of an education "fitted for freedom", in the sense that it "...initiated the elite into the time-honoured traditions of their own society; it sought continuity and fidelity, and discouraged critical reflection". The "new" idea, favoured by Seneca, believed that an education is "truly "fitted for freedom" only if it is such as to produce free citizens, citizens who are free not because of wealth or birth, but because they can call their minds their own" (Nussbaum, 1997, 293).

The first model is one of social control and transmission and the maintenance of existing power structures within society. The second model is one of individual development and liberation via a process of critical reflection. The development of a 'critical consciousness', through critically reflective skills, according to Freire (1972), can be seen as potentially anarchic and leading to disorder. At the very least it can cause people to question the values, morality and beliefs of the existing power structures and their place in it. The fear of disorder and the need to maintain the status quo of socio-economic power structures leads to the pursuance of what Freire called a 'banking' system of education which feeds the passive receiver student with that which society deems necessary and safe to know. Nussbaum, like Freire, thinks that it is important to cultivate humanity and she argues that as citizens of an increasingly complex community, country and interlocking world, we need the skills, critically reflective processes and creative approaches in order to cope successfully, survive and flourish both as individuals and communities.

Tensions and choices for educators

Creativity is seen as an increasingly important element by governments and industry for the social and economic wellbeing of societies worldwide, yet creativity is not morally neutral. As Craft states the "...establishment of creativity has occurred, in many parts of the world, with direct reference to the value framework of Western individualism, driven by the capitalist globalized marketplace". (Craft, 2006, 340)

Craft raises two main objections to a market driven approach to creativity in education which are arguably applicable to the wider community. Firstly that the discourse around creativity assumes a universal definition of attributes which are as Ng (2003) suggests, 'culturally blind' and with 'generative thinking outside of social and other norms' (Craft 2006, 341). The second problem relates to the 'consequences of emphasising the role of creativity in selling ideas and products and reinforcing market led consumerism.

Both of these objections raise difficult ethical issues for both educators and the wider communities. If creativity is used in a culturally blind way and only for the benefit of some individuals or communities, the results could be potentially detrimental sections of a society.

Educators would, if they taught creativity as a socially and morally neutral process, be supporting the development of people who with indiscriminate use of powerful processes could heighten conflict, increase social imbalances and use their skills to fuel the consumer culture and further damage the environment.

Craft proposes that, to function in a positive way within and for the wider society, the process of nurturing creativity within education should be informed by wisdom, and I would add that this should be extended to all uses of the creative process. Humans can apply their creativity to the great benefit of humanity developing vaccines to cure illness or using nuclear power to provide electricity. Equally people can be creative in designing lethal viruses for biological warfare or the ultimate destructive force of a nuclear bomb.

If individuals and the wider community are to thrive in a time of constant change learners need to, as Marshall (1999) suggests, 'live life as inquiry', and actively engage in meaning making. If one views the post modern world as Bauman (2000) sees it, as in a state of 'liquid modernity', then the theory of learning which correlates with this worldview is 'social constructivism' in which meaning and knowledge are created and re-created within each individual through social interaction. This approach does not deny the importance of existing disciplinary knowledge. It is important that student doctors learn how to give injections safely and engineers can measure stress loadings in buildings.

'Learning: The Treasure Within' a report to UNESCO on Education for the Twenty-first Century states that "choosing a type of education means choosing a type of society" (Delors, 1996, 41). In our choices and actions as educators we have to balance the tensions of discipline knowledge, curriculum, assessment and institutional requirements and student wants and needs with wider moral issues of person and community development. If we truly want to 'cultivate humanity' in Higher Education, and by definition the wider society of which it is a part, then we need to replace the prevailing focus on performance based knowledge transmission with the creative act of learning in all its dimensions.

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Chapter 3

Troublesome creativity

Paul Martin

Introduction

'There have been many popes but there is only one Michaelangelo'. That risky aside to a powerful benefactor who literally held power of life and death, demonstrates many of the troublesome issues which surround the concept of creativity. This includes the white, western, male concept of the creative genius which still pervades our culture; the individual nature of that power and the potential disruption and challenge to existing ideas, knowledge and power structures. This chapter will explore this strange phenomenon of creativity which our society holds in such high regard, through discussing a short history of creativity, by looking at different types of creativity and considering different explanations of the creative process.

A short history of creativity

In western civilisation the idea of creativity starts as a literal 'act of god' and is aligned with the power of bringing the universe into being, the ultimate act of creation – 'let there be light'! The rise of the importance of the 'individual' in society developed during the renaissance alongside a rapid expansion of knowledge and what could be termed creative acts in the arts and sciences. Creativity was explained as god inspired acts of man. Michaelangelo painted the giving of life by God to man in the Sistine Chapel yet his artistic creations led him to be labelled a great artist in his own time, contributing to the cult of the male creative genius. Yet even as art was often made to the glory of god, the relentless visual inquiry into the reality of nature was beginning the work of the enlightenment. As early as 1490, Leonardo Da Vinci's famous drawing of a man in a circle and square illustrating human proportions, placed mankind at the centre of, and fitting those pure geometric and mathematical forms.

As, around the time of the renaissance the sum of all human knowledge became more than one person could know, knowledge began to divide into specialism's with the increasingly determinist science on one side and the arts in gradual opposition. As the ideas of the enlightenment gained a hold, the developing scientific paradigm challenged the position of the established religion. Work by Kepler, Galileo and Newton began to transform the way our world was understood and with this developed the technology and the philosophies which supported the taming of nature to mankind's ends.

A romantic belief in the 'inspired self' arose as a reaction to the new rationalism and the 'means to an end' rationale of industrial capitalism. At the same time the decline in religious belief was mirrored by the rise in the belief of the spirituality of nature. By the end of the 19th century the transition of creativity from god to man was complete when Nietzsche (1969ed) wrote in 'Thus Spoke Zarathustra' that 'God is Dead' and man/woman is the centre of their own universe and can therefore, by inference, all be creative.

As, during the 20th century, women, through the suffragette and feminist movements have struggled for and claimed equity in society with men, so they challenged the romantic notion of the 'male genius creator'. Definitions of creativity became more inclusive, accepting community as well as individual activity. However, the century has also seen the trivialization

of creativity as mere novelty. This and the sublimation of the individual as a consumer in the global economy have arguably led to the devaluation of creativity as a mere tool for economic ends.

So, what is creativity?

The word 'creativity' has become a modern mantra and is seen by many as a panacea for a wide range of problems. Interpretations of what creativity is range from the power of god to create matter and life, through the inspired artist or scientist such as Bach or Einstein to an individual's craft skill or ability to re-organise an office layout. As a concept, 'creativity' may have become so broad as to be completely devalued (Negus and Pickering, 2004). Yet creativity involving the manifestation of new ideas, concepts, processes, artefacts or new understanding is important to individuals, communities and our society as a whole. In many ways it is like the Tao, indefinable yet with describable attributes. But what is it fundamentally and why do we as humans value it so much?

Arnheim argued that from psychologist's point of view one needed to decide if creativity is more of 'an instinct or a reflex'. If instinctive, creativity, is essentially a gift of the gods which causes the creative person to feel '... impelled to search the world for subjects about which to be inventive, formative, scientific or poetical.' If a reflex, creativity is a possible form of reaction for people who are 'born into the world full of invitations to act' where there are 'mysteries and problems, challenges, threats and opportunities'. In such a world, he sees that we are 'driven' by 'our own interest to explore, understand' the potential around us. (Arnheim, 1996, 92)

As we are social creatures, some forms of creativity are seen as having more value than others, but these value judgements are dependent on both the context and the dominant values of the society or section of society that is making those judgements. Negus and Pickering (2004) and Bohm (1998) see originality as being a key element of creativity, something that is still prized in our society. However, not all creative endeavours are successful and it is perhaps a willingness to risk failure that is a key feature of the creative process. As such, this poses a severe problem for its inclusion in our increasingly 'risk averse' society. In HE, the increased responsibility on staff for student's academic success and those student/consumers increased focus on attaining qualifications, can be seen in opposition to any process which adds extra risk into the knowledge transfer and reproduction seen as the safe route to banking qualifications.

Bohm sees the creative process as arising from a creative state of mind which is, "...one whose interest in what is being done is wholehearted and total, like that of a young child. With this spirit it is always open to learning what is new, to perceiving new differences and new similarities, leading to new orders and structures, rather than tending to impose familiar orders and structures in the field of what is seen" (Bohm, 1998, 17). Perception is at the heart of this process but this is not the day-to-day recognition process of the mind judging against its known patterns. It is a form of seeing through what artists would call the 'veils of perception' so one is capable of seeing afresh, which Bohm and Krishnamurti (1992) say requires one to be attentive, alert, sensitive and aware.

To engage in creative inquiry, one must therefore put oneself in a creative state of mind that is open to new possibilities. This can only be achieved if one is aware of the ways in which the mind creates, what many psychologists and philosophers call the 'veils of perception'. These 'spectacles of memory' (Merleau-Ponty, 1962) filter new experiences and ideas through our existing knowledge, values, beliefs and one needs to become aware of, and learn to suspend such judgemental thought processes in order to be open to new possibilities. This is similar to the practice of many artists and Briggs and McCluskey observed that artists have "grounded themselves in the ambivalence of meanings and have worked to reveal to us the nuances and uncertainties that infiltrate our apparently absolute perceptions and truths about life" (Briggs and McCluskey in Pylkkanen ed. 1989, 279). As an artist I understand this process as a form of visual inquiry but many other disciplines have their own creative processes.

Above all, the rationale of creativity is to make new meaning manifest either in the form of transforming one's own or others understanding or creating a new object, idea or process. This may require a sort of mental balancing act between the openness to the new and the employment of disciplinary skills with which to capture and develop the new meaning. For example, for an artist who develops her ideas of something seen and felt, there is a dialogue through the medium with the object/image being created. There are skills needed in the use of materials and judgements about line, tone, form, composition etc., and how the emerging work successfully captures the idea, but these have to be subordinated to serve the process and allow the new to emerge and not stifle it.

Types of creativity

If it is problematic to try and define what creativity is, many thinkers have attempted to define types of creativity from observations of its attributes.

The art educator Eisner (1972) identified four main ways in which creativity can be displayed:

- 'Boundary Pushing', which consists of extending or re-defining the limits of common objectives, such as adding blades to safety razors to make them more efficient.
- 'Inventing', the process of employing the known to create an essentially new object or class of objects.
- 'Boundary Breaking', where there is a rejection or reversal of accepted assumptions and the making of the 'given' problematic.
- 'Aesthetic Organizing', the conferring of order and unity, coherence and harmony which could be evidenced in a work of art or piece of architecture.

However, Banaji et al. (2006) in their report 'Rhetoric's of Creativity', took a mainly sociological perspective seeing creativity as defined by its rhetoric's which are in turn constructed by the various societies and communities within which the phenomena is observed. These include;

- 'Creative genius', as discussed earlier, where creativity is historically cited within the white, western, male, individual.
- 'Democratic and political creativity' which relates to the connection between creativity and different definitions of culture and what those cultures recognise as having value and social acceptance and power.
- 'Ubiquitous creativity', with its democratic vision of creativity as capability within all people.
- 'Creativity as social good' where creativity is seen as a co-operative activity for the potential benefit of all.
- 'Creativity as economic imperative' about advancing the country's economic prospects through creative workforce development.
- 'Play and creativity', which recognises parallels between the processes inherent in both.
- 'Creativity and cognition', researching the links between the two via both qualitative and positivist techniques and traditions to see if creativity is a function of cognition and or intelligence.

The report raises some interesting questions, particularly for those in education. To what extent is creativity an internal cognitive function or a social and cultural phenomenon? As the creative person acts within a social group she or he, however creative, is not acting in a cultural vacuum and however good their internal creative attributes may be, they are fed by and are expressed through that cultural language. Is creativity ubiquitous or the preserve of a special few? If one ignores the mystery of genius, then however predisposed to creative process people may or may not be, there are many techniques and practices which can help them develop creative approaches to work and life. Is creativity an inevitable social good? Knowledge of nuclear power is in one sense neutral but the use to which it is put can either fuel society or destroy all life on the planet. In that sense creativity has a definite moral and ethical

dimension. There has been much creativity in developing ways of killing from the duelling sword to the smart bomb, therefore although it is often hailed by society and governments as an unqualified force for good it is effectively a power for good or evil dependent on our moral judgement for its usage.

The physicist David F. Peat (2000) also recognises the moral dimension of creativity but adds spiritual and humane dimensions. He sees types of creativity as defined by their intentions or outcomes, identifying three main groupings as; making something new, original or unexpected; renewing and sustaining what already exists; and finally healing and making things whole. The first two reflect Eisner's more practical categories, whereas the third implies both an ability and moral duty to use the creative forces for the good of the world as a whole to heal and make things whole where our human interventions are often divisive and destructive to other cultures and species.

The creative process

There have been many attempts at mapping the creative process. Edwards (1988) charts development in models of creativity from Helmholtz in the end of the 19th century through Poincaré to the psychologist Getzel in the 1960's. Getzel's five stage model, upon which the InQbate CETL based its early development work included:

- First insight – the initial awareness of an idea/issue/problem etc.
- Saturation – immersion in the field to find out more
- Incubation – thinking or working through ideas often unconsciously
- Ah ha! – the eureka moment of understanding
- Verification – checking the validity of the new

Whilst this model is helpful in defining the stages of creativity, it is rather linear in concept and pre-supposes an 'Ah ha' moment in the inspirational mode in which all suddenly become clear or is known. Whilst that can be so, as an artist, and like many colleagues in other disciplines, I often experience the development of a work or idea slowly over many months with a myriad of tiny 'Ah-ha' moments and setbacks until the new form, be it a painting, an idea, a design or process reaches a stable state. In effect Saturation, Incubation, 'Ah ha' and verification would be almost a constant cyclical or spiral process often missing out stages.

In many ways it is the psychoanalyst Ehrenzweig (1984ed) who in the 1950's came closest in his analysis to describing my own creative experience as an artist. He saw the process as comprising three states; 'Initial state' of fragmentation; 'Second state' of initiating unconscious scanning and the 'Third state' of re-introjection.

In Ehrenzweig's first state of 'fragmentation' the person must put themselves in a state of 'de-differentiation' by overriding their existing models of understanding and tolerating opposing possibilities and potentials and the anxieties this may cause. In the second state, the person must initiate unconscious scanning allowing new possibilities to emerge and gradually integrating new structures through countless cross ties and connections. Finally in the third state of, 're-introjection', integration or re-differentiation takes place in which conscious awareness of the new whole emerges as a new form or entity. This describes a psychological shift in which the person has to let go or put to one side their existing knowledge, thought processes, values etc, in order to be open to new possibilities; to allow the creation of new possibilities and forms which can be judged when they have coalesced.

Creativity as meaning making

The models of creativity expressed above are similar to the observations of the physicist David Bohm (1998) who sees creativity as dependant on perception and being able to recognise something new, which requires a state of mind which is 'attentive, alert, aware and sensitive' and which does not impose existing preconceptions. This is also very similar to the state which the educationalist Mezirow (1991) says is necessary for transformational learning to take place in which a person may have to abandon or modify their values and beliefs in order to accommodate their new experience and to create a new meaning.

Bohm sees creativity as potentially opening the way to transform the individual, saying that, '...the being of ourselves is meaning; the being of society is meaning...[therefore] a change of meaning is a change of being' (Bohm in Pylkkanen,23,1989). Both Bohm and Mezirow speak of the transformational process of making new meaning, the core human activity of change and development, which is ultimately what the creative process facilitates in the creation of new forms, knowledge, understanding and processes.

This chapter has introduced a variety of ideas exploring what creativity is, ranging from a god given, to a socially constructed phenomenon which can be seen as both the preserve of the genius or an everyday common occurrence. There is no one, right, definition of creativity but it is important that as educators we understand the different meanings inherent in the use of the term creativity, the variety of ways its use can be encouraged and engaged in the learning process and the moral and ethical issues inherent in its uses.

The process of change, creation and re-creation is the natural order of the universe. If, as educators, we do not help people engage with and contribute to personal and social creation and development, what is the point?

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Chapter 4

What are creative spaces?

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

The idea of having a special 'space' in which to work, learn and be creative is not new. Since early Renaissance times, artists and writers have had studios and retreats as spaces to develop their work without scrutiny and engineers and designers have had workshops in which to test and fashion their ideas and inventions. Historically audiences were able to view surgery being performed in operating theatres and this method of demonstration and observation is still used to teach medical students. Contemporary examples of dedicated creative spaces include design studios, architects offices, science labs, rehearsal rooms and more recently corporate fun or fab labs. These spaces vary with individual needs and may include specialist furniture, equipment, tools, materials and even toys. They might have a wide variety of resources from books to web access or be an empty uncluttered environment for inner reflection.

The development of the Creativity Centre learning space draws strongly on this tradition but has also been influenced by the changing needs of the 21st century learner, new approaches to the facilitation of learning, the potential of re-configurable spaces and modern technologies.

Research into creative spaces

Education institutions have been modernising their buildings and creating new structures to deal with the pressures of increased student numbers and to support the perceived shift in learner requirements, pedagogic approaches and the effect of new technology. Whilst there is considerable literature on creative thinking and the techniques that can be effective in stimulating creative teaching and learning, there is little about the spaces which support this type of thinking and practice.

The authors of 'Designing Spaces for Effective Learning' (JISC 2004) state, 'the design of learning spaces should be a physical representation of the institution's vision and strategy for learning' and, 'a learning space should be able to motivate learners and promote learning as an activity, support collaborative as well as formal practice, provide a personalised and inclusive environment, and be flexible in the face of changing needs.' In the Higher Education Authority's report 'Learning Spaces for the 21st Century' (2007) however, Temple argues that, "a substantial proportion of the literature on spaces in higher education makes unsupported, or at best anecdotal, claims about the benefits of new designs", and that "empirical findings are often flawed".

Researchers for the Design Council Report 'The Impact of School Environments' (2005) found that, "It is extremely difficult to come to firm conclusions about the impact of learning environments because of the multi-faceted nature of environments and the subsequent diverse and disconnected nature of research literature". Both this and the 'Spaces for Learning' (2006) review of learning spaces in further and higher education for the Scottish Funding Council, agree that there is evidence that poor ventilation or noise can have negative

effects on staff and learners. However the positive effects on learning are less clear when learning environments come up to the minimum standards, though there is some evidence that staff and students respond positively to enhanced buildings and landscaping.

Without the benefit of much relevant data at the start of the project, the Creativity Centre team's intention was to offer a new and flexible environment that would free teachers and learners from the constraints of traditional classroom layouts, contents and allied pedagogies. In doing this teachers would be able to both experiment with new strategies and behaviours and adapt the spaces to their own needs.

Different concepts of creative space

Whilst the Brighton Creativity Centre was conceived as a physical environment for human activity, there is a risk that creative spaces may only be perceived as physical space, yet the 'learning space' can be conceptualised as comprising 'physical space', a 'virtual space' and a 'personal psychological space' and even a 'biological space'. All these 'spaces' may impact on the individual's ability to learn or be creative.

The **physical space** can be defined as the environment in which learning and creativity takes place. This may vary in nature dependant on personal preference, need or chosen discipline from writer, artist, designer or engineer. For example a chemist may need a fully equipped laboratory, an artist her studio. It is important that the physical space supports the learning or creative process and does not obstruct it in the way that fixed lecture theatres can inhibit learner participation.

The **psychological space** for learning and creativity is shaped by many characteristics of the individual and by the contexts in which they live, work, socialise and learn. A learner's personal values, beliefs and perceptions arise from cultural influences of family, friends, religion, society, gender, profession, discipline and biographical experiences. These form the basis of the filters through which learners decide how, or even if, to engage in learning activities or creative processes. Perceptions surrounding attitudes and expectations of fellow learners and teachers or employers, even a person's emotional state may also positively or negatively affect the outcomes of engagement in the learning or creative processes.

The **virtual space** encompasses not only connections between individuals and groups locally but also to the wider community through the worldwide web. Opportunities for learners can be provided in various interactive forms, but also the learner has greater freedom to make connections and to trace interests and interest groups in the virtual environment. In addition, the potential to collaborate with other institutions both in the UK and in other countries is far greater through communication in the virtual space than it could ever be in the physical space. There is, however, increasing awareness of barriers to the use of e-learning technologies that need to be better understood.

The **biological space** can be characterised by the individual's physical and mental ability to engage with learning. There are a wide range of physical disabilities which can potentially cause problems for learning including degrees of blindness or deafness along with syndromes such as autism, dyslexia and many others. The neuroscientist Susan Greenfield (2008) says that depending on the type of training the brain receives over time, it creates and strengthens certain synapses or pathways. These can pre-dispose a person to react neurologically to input in an almost pre-determined way, limiting their learning potential and hampering their ability to expanding their understanding.

Teacher/facilitators and learner/participants also bring their internal space to the creativity centre and their interaction creates an **interpersonal space**. This makes the type of interaction between people in a creative/learning environment vital in determining the potential outcome.

Creating space for creativity

There is a sense in which we all need to create our own inner space, to allow ourselves the mental space and the time to play and dream and to vision new possibilities. Creativity and the conditions it needs to thrive require nurturing as much as any other human activity if we are to enable our imaginations to dance.

It is important to realise that the quality of any physical creative space in itself will only enable learning and creativity to happen if co-operative, democratic and facilitative approaches to the learning and creative process are adopted by both learners and teachers. It is these attitudes and approaches to the learning and creative processes which enable the construction of shared meaning, knowledge and understanding.

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Section III

Putting creativity into practice

The chapters in this section offer a variety of ways in which creative processes can be introduced into the learning and teaching environment and range from envisioning new ways of working and using drawing as a tool for dialogue, to practical suggestions for workshop activities and one tutor's experience in using the Creativity Centre space to help engage learners in their own learning processes.

Chapter 5

Imagining better ways of working

Viv Martin

We are all essentially creative. In many ways, creativity is the stuff of life – we grow and change as people throughout our lives, in physical and social settings that we constantly adapt and to which we adapt ourselves. It is strange then, that we see creativity as a talent or as something that is rare and in need of careful cultivation. Perhaps what is needed for us to develop more creative ways of working is a greater awareness of the creativity within and around us and more attention paid to nurturing the conditions in which creativity can flourish.

In the context of creativity and work, creativity is closely associated with the ability to change things, to do something differently and, hopefully, better than before. In the context of learning and teaching the focus is on developing conditions in which people can learn and teach more creatively – developing better ways of learning and teaching in order to develop learners and teachers who flourish in conditions in which they are growing.

Is this pie in the sky? Unrealistic, pink, fluffy thinking about something that can never be achieved? Why should it be? We have all contributed to development and maintenance of the conditions in which we currently work, so we can certainly contribute to changing them. Perhaps we face two overwhelming problems that constrain our ability to act creatively; the need to develop a collective vision of a better way and the need to believe that it is possible to change the rules!

Developing vision

Many people are uneasy with the idea of developing a vision. The word implies something creative, perhaps mystical, idealistic or romantic and certainly rather unusual. A vision is an idea, but one that can be described in a way that enables it to be shared with others. The word vision is used to describe both a way of seeing things and something that can be deliberately constructed.

There are a number of ways in which you can develop and capture a vision. Different approaches will attract different people. Some are comfortable with allowing imagination to range freely and others are much more comfortable with approaches that build on more concrete foundations. If you are developing personal vision, you can be free to do whatever helps you to be inspired, but if a vision is to be widely shared, approaches will have to be taken to communicating emerging ideas and building the vision in a way that is meaningful to all those involved and which attracts commitment.

Collaboration in developing vision is very important if shared commitment is to be achieved about making change in an organisation, but in complex settings people often have very different ideas about priorities. This can lead to development of a number of conflicting visions. These must be reconciled if people are to be able to work together towards one shared vision of a desirable future. Commitment to a vision is an essential step, both for individuals and groups, before commitment to a direction of change can be developed.

The nature of vision

Vision, in the context of change, is an idea about the future. We all have such ideas, all of the time. If someone asks you what you want, you might give a very practical reply or you might give a reply that you think is exaggerated and fanciful, something that could never happen. Both are visions. Visions are ordinary experiences and influence our everyday decisions.

Visions can also be ideas that provide hope. If someone is lost in a desert without water, they might see a vision of an oasis and gain the strength from that hope to go a little further. Visions can inspire us to make an extra effort.

Visions can provide ideas that describe a future that looks attractive to us, a dream of what might be. As we each have different hopes, fears and concerns, shared visions might have multiple facets that offer different types of attractions to different people. When a vision is of a future that will be shared by many different people, it is advisable to involve them in developing that vision so that the variety of interests can be included. Mechanisms might include workshops, working groups, future search conferences and other approaches that allow imaginations to be stimulated, ideas to be shared and potential consequences discussed.

Visions can be powerful because they can interact with our hopes and fears, with our values and with our need to see some continuity into the future. This is why visions are so important as part of leading innovation and change. A clear and shared vision of a better future is very inspiring and motivating. If the vision is accompanied by plans for progress that appear to be achievable, people will often want to put energy into making the vision a reality.

Creative visioning

There is no one way of developing ideas, dreams or visions. A vision is an idea that has been described in some way. It is not always a visual image, it might be described in words. As an individual, you can use your own imagination and ability to be open to new ideas to develop your own vision. Shakti Gawain describes two ways in which we can do this for ourselves:

'There are actually two different modes involved in creative visualization. One is the receptive, the other is active. In the receptive mode we simply relax and allow images or impressions to come to us without choosing the details of them; we take what comes. In the active mode we consciously choose and create what we wish to see or imagine. Both these processes are an important part of creative visualization, and your receptive and active abilities will both be strengthened through practice.' (Gawain, 1978,27)

These two approaches provide a choice. People who are comfortable with working with their intuition and dreams can do so and those who are more comfortable building on their ideas and making choices can take that approach. If we are working with groups we will probably have to use both approaches if we are to welcome and respect all contributions.

Most approaches to visualisation that encourage you to be receptive require you to become very relaxed before allowing your mind to be open to ideas and impressions.

Relaxing

If the context permits, this can be done by lying on the floor, on your back, allowing your hands to turn upwards with the backs of your arms a little away from your body and your legs slightly apart.

You can then check each part of your body to deliberately relax the muscles. Do this by first taking your attention to your left foot. Tighten up the muscles in that foot, so that you can feel that they are tight. Then let all of the tightness go. Work your way to your ankle, your calf, your knee, your thigh, each time tightening the muscles and then letting the tightness go. Do this through the other leg, each arm; your abdomen, chest, back; your neck and face, until

you have released the tension in all of your muscles and the floor is supporting your weight. Continue to breathe normally as you do this. Notice the rise and fall of your rib cage and the flow of air in and out of your lungs as you attempt to clear your mind.

You might need to practice this until you feel confident that you can bring yourself into a state of relaxation. This process, in itself, often enables people to open their minds by calming and soothing away the clamour of demands that so often surrounds us. You might stay in this relaxed position for a few minutes and try to keep your mind open to whatever might drift into it. If you find that day-to-day work keeps returning to you in a stressful way you can maintain the relaxation by bringing your attention back to your body whenever you need to, returning to the checking process to let go of any tensions that have developed.

The relationship between relaxing and allowing vision to develop is not a direct one because our busy lives sometimes keep intruding and demanding attention. There are some techniques that can help you to focus on developing your vision.

Visualise a journey

Some people find it helpful to use stories to set up conditions in which they are open to receiving ideas. These often take the form of a short journey to a special place. For example, you might imagine a walk through a wood to a clearing that becomes a special place for you and where you can be open to ideas. Use whatever imagery works for you and allow your story to have an 'open' space in it for you to discover something or to receive an idea. Then, again in your imagination, make your return journey and bring your attention back to your body and your surroundings. If you have had an idea, make a note of it, even if you are not sure what it means. Sometimes it takes some time for complete ideas to develop and often they are more about our values than directly about different ways of organising our work.

Pink Balloons

A technique that can be very helpful for people who hold onto anxieties and worries is to allow yourself to visualise them floating away. This is particularly helpful for worries that take your attention and stop you from being creative. The technique works by making a strong mental image of the anxiety, giving it a form as an image or as words. Then imagine putting it into a pink balloon that completely encases it. Allow the balloon to gently float away, bobbing up into the sky until it is out of sight. If you really must, you can keep hold of the end of a string so that you can pull the balloon back if you need to at some later date.

Finding ways that work

I warned you that creative visualisation is not something that appeals to everyone or that everyone will find possible or useful. These techniques can be used individually or with small groups.

Reconciling alternative visions

It is important to remember that we all bring different abilities and qualities to bear on our work and for most of us our work is an important part of our lives. If we respect what others offer we are able to draw from a much broader resource than if we restrict development of ideas to a small group of people who think and develop ideas in similar ways. As change in one area often has implications for other areas of work, there may be different ideas about what a better situation would look like. People in one area of work might have focused their thinking on how to improve the physical conditions in which they work. Others might have focused on making improvements to the ways in which they work and people in another area might have put more emphasis on the interactions and communications that take place within their area of work. This can be a great advantage, because these ideas can be brought together to create a much richer vision that can attract the support of many more people.

If no attempt is made to bring different visions together, there is a danger that momentum to change will be lost while people compete to support different visions. When one group

have developed a vision they can become quite possessive about it. Involvement at this stage of any other people who will be affected by the proposed change can enable a more inclusive vision to be developed. This will also ensure that more people are ready to support the changes.

Committing to the vision

The process of developing the vision is not complete until enough people become committed to the vision to provide support for change. The process of developing commitment has been described as 'circling frequently and closing as late as possible'. The circling has probably already taken place in the form of discussion and development of ideas with different individuals and groups and then with larger groups, perhaps from different areas of work. To ensure that everyone stays in touch with the vision as it becomes more detailed and more widely understood, the original groups need to continue to be involved. It is helpful to stay open to minor alterations and embellishments to the vision for as long as possible.

Communication during development of the vision is very important. Even if there is wide involvement in developing a shared vision, those who have not been part of the latest discussion will want to be kept informed and consulted about any proposed additions or alterations. Those who have been involved in discussions will probably talk to others and so an informal sharing of information will shape understanding alongside whatever formal communications are shared. Sometimes use of flip charts as ideas sheets in convenient places in organisations can allow ideas to be offered for consideration at later meetings. News sheets outlining progress and inviting other ideas can help to both keep the lines of communication open and involve those who cannot take part in the group discussions. Two-way communications are essential if those developing the vision are to stay aware of any discomfort or dissent. Challenges to the developing vision are often very useful in pointing out weaknesses or ideas that are unlikely to gain wider support. Effective communications during the development of vision will both share ideas and enable ideas to be questioned and challenged.

When the vision seems to be robust in describing a desirable future that is widely supported, the process of developing the vision will have made strong connections between the past, the present and the imagined future. You will be able to describe this connection as a story that can help to prepare everyone for the change process. The story will have a beginning. This may include acknowledgement of past success and strengths in the organisation and lead to how people began to realise that change was necessary. The story might then continue to note the key issues that were discussed and the opinions that were expressed during consultations about possible futures. The story might describe the contradictions that emerged and the difficulties that were faced in attempting to reconcile different views. A compelling story will weave these elements to arrive at a description of the future that everyone agrees will be the right next step. This story will be the one that is repeated throughout the change process to inform and to inspire progression towards its conclusion.

Development of a vision is more than setting a goal that sets a marker for change. It can be a process that engages people's hopes and fears that involves people in revisiting their values and facing challenges to their assumptions. The reward for engaging in a process that involves people in this way is the commitment that is generated. This commitment can provide the energy and willingness to try different ways of working that are essential to carry out change.

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Chapter 6

Drawing the spaces between us: using drawing encounters to explore social interaction

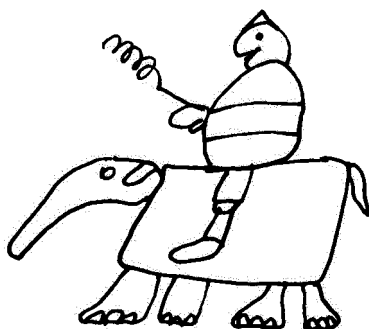
Angela Rogers

This chapter explores the question ‘What might we discover by drawing the spaces between us?’ It does this by exploring the potential of dialogic drawing through ‘Drawing Encounters’, a process using drawing rather than speech for interpersonal communication. In a procedure similar to casual conversation i.e. a familiar ‘one-to-one’, ‘face-to-face’, ‘turn-taking’ experience, (Eggins and Slade, 1997) the ‘Drawing Encounter’ uses collaborative drawing as a means to facilitate a connection between two people and elicit tacit aspects of one-to-one social interaction.

This method of collaborative drawing creates a novel space for play and exploration where the process of improvising the rules of engagement, and negotiating the shared territory, is made visible, and the paper becomes an arena for mutual reflection and collaborative inquiry. My experience of engaging teachers and students in this process suggests that using visual analogy to reveal what we can do in the spaces between us could help us address personal and professional aspects of identity, communication and collaboration in educational contexts.

What might drawing have to offer our understanding of interaction?

Arnheim’s ‘Visual Thinking’ (1970), provides an example of a visual problem that supports the idea that drawing can offer analogies for interaction. Here Arnheim demonstrates how a child’s drawing of a horse and rider reveals the tension between loss and gain in human interaction:



AUTHOR'S (2010)
INTERPRETATION OF ARNHEIM'S
DRAWING (ARNHEIM, 1970, 264)

“The clown on the elephant has assumed the profile position in deference to his mount. In addition, however, he has given up one leg. To accept this sacrifice as legitimate requires a much stronger modification of earlier thought than did the mere omission of the legs... In early drawings, children easily ignore limbs; but to acknowledge their presence and to agree to amputation nevertheless calls for a more radical departure from the primary image of the

human figure. The child faces here, in a perceptually tangible and relatively neutral situation, the often painful problem of interaction: the part must be modified in the interest of the whole; and the particular form and behaviour of the part is understandable only through the function in the whole”. (Arnheim, 1970: 265)

He continues to comment that, “As a cognitive problem, interaction poses difficulties at all levels of theoretical thinking; as a problem of interpersonal relations, many people never truly succeed in solving it” (Arnheim, 1970: 265). The overlap of the first horse and rider demonstrates what

Arnheim describes as double occupancy, which he suggests causes visual rivalry and needs to be resolved and unified (Arnheim, 1970: 265). I disagree that this overlap is necessarily a problem and propose that it can be an advantage because it gives drawing a dialogic potential; two different entities can co-exist in the same space at the same time without conflict.

Looking at an example from another field, the psychiatrist Donald Winnicott (1971) devised the squiggle game to encourage patients and clients to begin to talk in the initial stages of psychotherapy. In 'Therapeutic Consultations in Child Psychiatry' (1971), Winnicott explains the squiggle game to a young boy in hospital:

"Iro and I sat down to a small table where there were two pencils and some paper ready laid out, and quickly we were involved in the squiggle game which I briefly explained. I said 'I shut my eyes and go like this on the paper and you turn it into something and then it is your turn and you do the same thing and I turn it into something'". (Winnicott, 1971:12)

Winnicott states that there is nothing original about the squiggle game; it is simply a way of getting into contact with the child that employs an exchange of drawings. Its power is in untying the knot, although in some cases there have been dramatic changes following one or two therapeutic consultations (Winnicott, 1971: 3-7). Winnicott's comments emphasise the simplicity and effectiveness of a drawing exchange as a means to make contact between strangers. In discussing his use of the squiggle game he makes it very clear that he does not impose his own interpretation on the drawn sequences, their meaning is a mutual negotiation between him and the child.

The process of a Drawing Encounter

The materials for Drawing Encounters were chosen to be un-intimidating and inexpensive, A3 or A4 paper and felt tip or brush pens. At the start of the encounter each partner selects a colour from a choice of contrasting colours and participants are asked to take it in turns to draw and see what develops. They are encouraged not to use any numbers or text and to refrain from talking if possible. Participants are asked to draw together for between 10 and 20 minutes. This is followed by a conversation where they share their experience and negotiate the meaning of the drawing together.

DRAWING ENCOUNTER
PROCEDURE AND EXAMPLES
OF MATERIALS (AUTHOR 2008)



How did participants conceptualise the encounters?

Partners have categorised the encounters in the following ways: a game of chess (at the start), cheeky banter, polite sparring, a playful interface, revealing thinking, like an expedition, improvisation, a duet, a playful attempt to communicate, meditation, a task, a struggle, a trail of thought and open engagement. Phrases used to describe the behaviour during the encounters have included pioneering, reciprocating, responding directly and indirectly, building on each other's ideas, open-ended, call and response, dance-like, tentative and 'ping pong'. The ease with which participants have identified similarities with interactions in other situations, and the range of their examples, indicates that the encounters have been able to enrich their understanding of familiar events. I suggest that this is because Drawing Encounters reveal our tacit understanding of social engagement through novel means.

Tacit knowing and understanding

Michael Polanyi in his seminal work on tacit knowing in the 1960s, says that, "tacit knowing may contain ... *actual knowledge* that is indeterminate, in the sense that its content *cannot explicitly be stated*" (Polanyi, 1964: 141). He uses the example of knowing how to ride a bicycle without being able to tell how he manages to keep his balance. Whilst riding he is certainly not aware that in order to compensate for a given angle of imbalance, he must take a curve on the side of the imbalance, where the radius is proportionate to the square of the velocity. This knowledge is only useful if known tacitly. For Polanyi, a wholly explicit knowing is 'unthinkable' and all knowing must be tacit or be grounded in tacit knowing.

Tacit knowing implies a knowing that is internalised or embodied and which is reflected in our everyday language. In our daily lives we may say that we have 'got the hang of it', 'it's within our grasp' or that we have 'a feel for it'. Polanyi points out that every time we interact with the world we rely on tacit knowing to make sense of the interaction (1964: 147). This must apply to our interactions with other people. He suggests that we come to know another person more profoundly by using tacit knowing to try and inhabit their actions, as it were, from their perspective (1964: 152). By drawing together our tacit knowledge about interactive behaviour much can be revealed to us. We have a particular opportunity to try and inhabit the actions of our partner, to see the world from their perspective as they draw in front of and in response to us.

Negotiating the Rules of Engagement

During a Drawing Encounter the provisional nature of the drawn marks keeps options open, and humour is often free and easy. Participants are able to pick up clues quickly about how far they can go, from the way their marks interact on the paper. Without openly acknowledging what they are doing, partners explore the constraints and the possibilities of the conditions presented and within the familiar framework of casual conversation they improvise rules for new situations. For example:

- Where can I start on the page?
- How soon can I make the first elaboration of the other person's drawing?
- Can I take noticeably longer turns than the other person?
- Can I develop the same image over several turns?
- Do I need to balance the affirming and negative responses?
- Do I need to balance the direct and indirect responses?
- Can I change the orientation of the drawing mid-way?
- Can I introduce anything violent, sexual or that refers to bodily functions?
- Can I scrub out something I have drawn?
- Can I obliterate something my partner has drawn?
- If my partner is drawing representationally can I make abstract marks?
- If there is an invitation to complete something can I ignore it?

Stafford proposes that seeing is about having the connectedness of things drawn to our attention, and that the visual arts make an elusive personal awareness substantially real in an external realisation (Stafford, 1999:138). The above situations can be interpreted as

analogies for aspects of one-to-one verbal interactions and negotiations in everyday personal and professional contexts. Using drawing to materialise these exchanges makes visible the previously under-researched distinctive sensing's and responsive understandings (Shotter and Billig, 1998: 22) that occur in 'one-to-one' exchanges. Tim Brown of the design consultancy IDEO, believes that co-negotiation of rules leads to productive play which is becoming an accepted element in creativity (Brown 2008).

Bohm and Impersonal Fellowship

In his writings on dialogue and in the development of his model of group dialogue, first published in the 1980s, David Bohm discusses the notion of impersonal fellowship. He describes it as a sense of warmth and connection between people that does not depend on them knowing anything about each others' lives or histories. He says that, "Such friendship has an impersonal quality in the sense that its establishment does not depend on close personal relationship between participants". (Bohm, 1987: 175) Many drawing partners have spoken about how they felt about their interactions. To some extent they felt that they knew each other or had built a relationship with each other through drawing together, despite not having any more information about the personal circumstances or the history of their partner.

One participant said, that she felt that in watching what her partner did, she couldn't literally say she understood more about them but it made them more familiar to her in some way ... more accessible for someone I hadn't met before.' Her comment suggests an emergence of impersonal fellowship throughout the drawing encounter. She was clear that in saying her partner was more familiar that she was not making a psychological interpretation but that the familiarity had come about just by watching how they were on the page.

I see this 'watching' as a form of paying attention to being with someone on the paper, in the same way you have to be attentive to your partner when dancing or playing cards. Any expressive collaboration can be exposing and if you allow someone else to connect with you it can be quite intimate, more intimate than a normal everyday encounter. Thien suggests that intimacy is understood in opposition to distance, and that it is maintained by the 'mutual and routine revelation of ... one's inner thoughts and feelings' (2005: 193). The rhetoric of intimacy as disclosure leads to the filling of the notional space between people until, "...distance is transformed into closeness and two become as one" (Thien, 2005: 193). I am certainly not seeking to demonstrate that through a Drawing Encounter two identities become as one, although this may sometimes appear to be the visual result. My aim is to show that the space between people can be brought to life, that separateness and connectedness may exist in one and the same space at the same time, mutually accepting co-existence, rather than a merging intimacy.

Bohm's model of group dialogue

Although Bohm's dialogue model is intended for use with groups and not one-to-one encounters, it shares several features with what can happen during a Drawing Encounter. These give a helpful perspective from which to view a Drawing Encounter in a learning context, and can be summarised as follows:

- No preset purpose or agenda apart from a desire for increased understanding.
- Recognition of the need to take time to settle in, slow down and work with silence.
- Acceptance that boredom, frustration and agitation are part of the process and may occur several times.
- The opportunity to recognise assumptions and defensive posturing and the potential to reveal consciousness and habitual thinking.
- Deeper listening, a listening attention that comes from awareness that there is no need for the display of knowledge or technique or the correction of what appears in dialogue.

- Non-judgemental curiosity, open inquiry and the desire to see things as freshly and clearly as possible.
- Respect and acknowledgement of individual difference.
- Development of impersonal fellowship authentic trust and openness.
- Back and forth emergence of new content that takes shape through discussions and an attempt to make something new in common rather than make things common.

(Bohm, 2004)

Potential applications

If we accept the notion that dialogue creates a space for reflection, where ideas interact and participants can productively and imaginatively build on each other's proposals (Wegerif, 2005), then it is reasonable to acknowledge the potential for new models of dialogue, using drawing, in educational and professional contexts. The success of Drawing Dialogue workshops with groups of students and professionals including international MBA students, the staff of a primary school including governors, secondary school students and staff (separately), teachers in higher education and public health professionals, has demonstrated the validity of these methods.

The feedback from participants indicates that most found the encounters very revealing about their own role in professional interactions and the opportunity it gave them to see from another perspective. Negative revelations of behaviours included the effect of withholding rules and information, maintaining exclusive territory, using inaccessible vocabulary, denying another's contribution and setting up protective boundaries. Positive observations included collaborating in invention, expressing empathy, surrendering to where someone else can take you, connecting through humour, taking a risk in a partnership and playing together. Participants easily identified analogies between the Drawing Encounters and their professional lives, these included the power dynamics of teaching and learning, managing individuals, relationships with clients or colleagues in a different discipline, feeling more confident about making independent decisions, not needing to be so closely directed, making space for a different kind of contribution when developing a project in partnership and risking goal-less activity.

Given the lack of literature on dialogic drawing, apart from some work on remote design collaboration and human computer interaction, there is a strong argument for further research within and outside the drawing community. What might its potential be as a tool to examine the dynamics of relationship in personal and professional contexts; contexts where drawing together could allow individuals to test out aspects of relationship without risking real world consequences? This could have particular applications in education, medicine, health, business and any field where intra- and inter-personal interactions are of major concern.

One Drawing Encounter participant spoke about the application of collaborative drawing in her own field, child protection. She said that safeguarding children usually falls down when people forget to think, and people think in different ways. Consequently any strategy that helps professionals in training to explore and understand different approaches to thinking is worth exploring. Another example of the potential application of the Drawing Encounter method is the way that it models collaborative inquiry. At the start of the process, the final outcome is unimaginable and it is impossible to predict what each partner will draw next. Participants have to cope with this ambiguity, incorporating each individual contribution into the whole, whilst maintaining a commitment to an unknown outcome.

The notion of impersonal fellowship may be a useful for professionals who work with clients or students, in supervisory and tutoring roles, where the balance of authority and intimacy is delicate and negotiable. For example, in the doctor/patient relationship, "Mutual respect precludes rather than requires across-the-board openness between doctor and patient, and disclosure of confidential information beyond the relationship is wholly unacceptable" (O'Neil,

2002). There are limited ways for any professional to practice their personal skills in 'one-to-one' consultation, whilst still in training, apart from through role play. It may therefore be the case that further research might be needed to demonstrate a role for dialogic drawing in this capacity. There may also be a wider role for drawing during medical diagnosis and treatment. Doctors often use drawings to convey anatomical detail and surgical procedures; it is possible that drawings made with patients could contribute to their understanding of their own conditions.

Following increasing recognition of the importance of dialogue in building community (Gerard & Teurfs, 1995; Banathy & Jenlick, 2005) and supporting collaborative innovation (Leadbeater, 2007), there exists a search for new ways and new places to carry out dialogue. Used as a means of dialogue, drawing facilitates an embodied response which may cut across institutional hierarchies and cultural differences more directly than spoken conversation. The drawing strategies discussed in this paper are indicative of other generative approaches – subjective, emergent and interdisciplinary – that make visual methods innovative and critical. In this chapter I have provided some examples to support the argument that arts practices are highly suited to generating new methods of conceptualising meaning and knowledge, and therefore, have an important role to play in a higher education system which has those concerns at its heart.

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Chapter 7

Creativity in teaching and learning: a case study

Richard Morris

This chapter is the story of one tutor's experience in attempting a more creative and learner centred approach to teaching as part of the Centre for Excellence in Teaching and Learning in Creativity project at the University of Brighton.

Why experiment?

The experiment relates to a 20 credit, level two, Professional Practice module, from the degree in Product Design at the University of Brighton and covers a range of topics that students need to understand as working, career designers. These range from science driven environmental analysis, fact driven consumer law and costing techniques, to more subjective and empathetic practice issues such as group dynamics. The choice of Product Design is significant in this context because it has a broad knowledge requirement and draws on a variety of disciplines including the humanities, arts and sciences. Also this specific course has a strong philosophy in preparing students to be able to tackle any variety of product design challenges, rather than one specific product type and this approach requires them to be capable of researching and working with new information independently.



The module is normally taught in formal classroom spaces which tend to constrain delivery towards didactic approaches. However, in the 2009/10 academic year, the module was delivered entirely within the Creativity Centre space, allowing a wide variety of alternative teaching approaches to be tried. I attempted to build my own pedagogic solutions focussing particularly on a perceived problem of learner engagement. These were considered 'creative' because they attempted to apply alternative pedagogic ideas to the module, in this case based on a social constructivist philosophy. The intention was also to tailor the delivery each week to the nature of the material to be learned in the form of what Monahan (2001) calls a 'built pedagogy'.

INFORMAL WORKING GROUPS

There was also a desire to be personally more creative, and to develop my own ideas in response to my observations of the changing learner landscape. In previous years for example, I have noted a disparity between 'A' level performance and degree classification and subsequently noted issues of motivation and organisation as being as important to higher level study as design capability (Morris et al, 2009).

The sessions

The sessions took place in the Creativity Centre's 'Leonardo' experimental learning and teaching space (see chapter 10 for a full description of the space and its technology). The first three sessions studied the design industry, exploring skills, portfolios and working practice. The room was set out with students arranged relatively casually in groups of 3 but with formal seats, white boards, pot plants and white lighting in a semi-office style. The white-board writing space clearly helped students to make their ideas and understanding more publicly explicit, and then to share and discuss relevant issues. As the session proceeded,



the entire floor area was cleared allowing work to be laid out in full view of all the participants, and insights to be shared out across the wider group. The lightweight furniture and sliding walls were crucial in being able to re-arrange the space quickly and easily, and the carpeting, gentle lighting and background music helped to set a relaxed mood.

In the last of these three sessions all 9 projectors in the room were used, showing looping PowerPoint's of placement work undertaken by the returning 3rd years. It took some time to organise this to be effective and required a box office, worksheets to encourage dialogue between 2nd and 3rd years and a roving technical eye to maintain all projector loops. The gallery style event was highly effective and well received by the students.

The module progressed to the subject of environmental benchmarking, exploring Life Cycle Analysis over a period of weeks. Initially, tables were arranged cabaret style to seat groups of 6, and students noted the value of being able to work together on the conceptual developments and analytical thinking which this subject requires.

A RELAXED WORKING
ATMOSPHERE

"Our year have very defined friendship groups who always sit together in lectures, however this seems to be less apparent in the Leonardo room [Brighton's Learning space]. Everyone mingles more with people they wouldn't normally." Level 2 Design student, 2009/10

THE GALLERY STYLE EVENT



It was useful to have enough room in the space to roam between tables and help groups. On the occasions that students would raise issues that couldn't be easily answered – such as, what is the tensile strength of bamboo? for example – it was easy, via the Centre's technology, to use internet access to find and project the answers. This was very effective in maximising the learner's productive thinking time rather than holding them up by chasing minor details. At one point, the projection system was used to simultaneously show Google, YouTube, the student intranet and material selection software, making the session lively, dynamic and engaging.

Environmental controls were also tried out to see if they supported or affected learning. During a discussion on pollution, the smell of engines was pumped into the room, and during discussions on global warming, the temperature was raised 5 degrees, the lights set to a soft red glow and images of dry landscapes were projected. These effects seemed to bring an added dimension of reality to the learning process.

CABARET STYLE WORKING GROUPS

Fact driven topics of liability, intellectual property and costing were given in a more relaxed environment than usual, with bean bags and mellow lighting to aid the absorption of information. Wrap around and large scale projection techniques were used to simulated different immersive environments, such as dragons den. These helped stimulate the subsequent discussions, role plays and exercises and helped turn what was normally an information transmission process into one where knowledge was more easily internalised by the students.



"The turn out for the DP232 lectures this year has been noticeably higher than any other module from this year or last year. I'm not sure if this is because the room feels more "casual" and people feel like it is less effort to come and sit in a relaxed environment than in a structured class room." Level 2 Design student, 2009/10

For the final sessions, a number of group based activities were run to introduce and illustrate a range of group dynamics including concepts such as trust, communication flow, leadership and decision making. Using the wall panels, small groups of students were screened off from each other to facilitate their focus and engagement on the set tasks. The walls were then slid back to open up the space and enable wider discussions around findings and theories to take place. Cameras were also used to record group dynamics and enable students to review and reflect on their interactions. One team building event was organised for the students at the Centre's sister Creativity Zone at Sussex University. This enabled the students to experience a very different flexible, creative space.

CREATING AN IMMERSIVE ENVIRONMENT





During the span of the module, other 'creative' ideas were also tried. For example, the cohort was often e-mailed in advance of sessions to raise awareness and wet appetites. Whilst this wasn't tweeting or blogging, the effect aimed to be the same. During the 10 to 15 minutes it took for the cohort to arrive for sessions and settle, dynamic music and videos were played rewarding those who arrived early, but also often introducing a related issue to the day's subject and hence opening up engagement. Having a multimedia facility enabled these introduction pieces to be set up alongside any PowerPoint slides, and this two-fold system offered some level of reassurance and smoothness in transition. Pictures taken throughout the weeks – such as those provided in this text – were also shown in the final session providing a powerful visual review of the course of the module.

INFORMAL DISCUSSIONS

On reflection

Delivering a traditional PowerPoint style lecture seems, in hindsight, to be relatively easy. It is an apparently efficient way to transmit information, and when you leave the lecture theatre the job is done. Just test what the students have learned at a later stage. Trying out these 'learner centred' approaches, by comparison, takes more time to plan and set up, and adds an extra layer of risk, but it's so much more effective in engaging learners in the process of their learning. It's difficult to quantify that effectiveness. The performance of the students at the assessment stage is higher than previous years but this might just be a more capable cohort. There was however a tangible shift in the way that the students who attended, engaged in and generated a more dynamic learning culture (Jackson, 2006). Student focus group feedback, described their experience as "learning" as opposed to "education". Learning was understood by them to mean a transformative process turning information into new understanding through reflection, cognition, challenge, argument, discussion and open mindedness, as opposed to the modules, timetables, information delivery, assessments and factors associated with the educational system. The variety of the delivery processes also caught their imagination too, helping them to place in their memories the different ideas and subjects. It also fed the student's different learning styles, in a way that didactic delivery cannot, so that all students had an opportunity to engage. The module feedback as a result was extremely positive, but it was not just a one way process.

GROUPS IN THEIR OWN WORKING SPACES





STUDENTS IN THE SUSSEX
CREATIVITY ZONE

As a teacher, it was enjoyable to develop and deliver the module using such approaches, with a real pleasure in observing and being more involved with the learning process. The inherent constraints of the lecture theatre and standard classroom will always now feel far more restrictive for both me as a teacher and for the potential in engaging students in an active learning process.

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Chapter 8

Practical approaches to creativity

Viv Martin

Creativity is about using imagination and making or doing something with originality. You may not feel that you can be a creative person, but creativity is built into us all – we constantly have to find new ways of doing things, rethink how we respond to things and check whether our 'old' attitudes are holding us back. Change is one of the few constants in our world.

Helping our learners to find their creativity is an important contribution to their ability to be flexible and confident, to learn to flourish in changing times rather than to be dismayed because things are no longer how they were. Here are some suggestions for ways of working with your students that will give them a chance to develop and trust their creativity.

Workshop style

Working with your students in workshop style is very different from conventional lectures because instead of teaching and being the subject expert, the lecturer becomes a facilitator of learning. The students become active learners themselves and also contribute to supporting other participants in learning.

Most of the processes involve participants *doing things* rather than hearing about them. Workshops are based on experiential learning – particularly that which occurs in groups, rather than alone. The teacher/facilitator takes responsibility for guiding and supporting the processes in the workshop and may also direct the purpose and content, although that can be negotiated with the participants.

It is important to explain to your students that you have planned a workshop session, particularly if you normally lecture and the students are used to listening and making notes rather than participating. If participants are clear about the nature and purposes of your workshops, they will get more out of them – and so will you.

If you would like to know more about workshops, many of the ideas in this chapter are drawn from Bourner, Martin and Race (1993) which is now available as a free downloadable book.

Workshop design for experiential learning

The basis of experiential learning is that the learner is directly involved in an event and then draws conclusions from it. These 'conclusions' are the lessons. Experiential learning contrasts with learning based on the experience of others which is what characterises most conventional forms of learning from lectures, books etc. Experiential learning is essentially active rather than passive.

A model of experiential learning has been developed by David Kolb (1984) and offers a way of conceptualising the process. He suggested a cycle of activities in experiential learning made up of four elements. These are concrete experience followed by observation and reflection, leading to the formation of abstract concepts and generalisations and then testing the implications of concepts in new situations. This provides the starting point of concrete experience for the next loop in the cycle.

This has considerable significance in the design of workshops. It suggests a general format of:

- Have an experience,
- Reflect on it,
- Form ideas and plans (conceptualise),
- Experiment; try it out.

It is valuable to remember that all four stages should be included in an experiential workshop.

This model also has significance for the design of workshop activities and processes. This is the reason, for example, that simply watching an expert conducting an interview is unlikely to improve the observer's interviewing skills. The model suggests that after an experiential activity the participants should be encouraged to consider the questions:

- What happened? (reflection)
- What's the significance of what happened? (conceptualisation)
- What will I do as a result?' (experimentation)

It is often helpful to end a workshop with a short action-planning session so that everyone goes away with a plan of what they will do as a result of their learning in the workshop.

Add colour

Colours are significant in different ways. Colours have psychological and physical effects on people. Colours are associated with different things. Consider using different colours just for variety or for a particular purpose like distinguishing one thing from another:

- use different colours for different parts of a diagram to clarify it
- use different colours for writing about different things
- use different colours for different people's contributions
- use different coloured paper for handouts on different topics
- use different coloured pens for 'before' and 'after' writing or drawing
- use different colours to identify different groups, perhaps on badges and lists
- use coloured backgrounds for power-point to reduce glare
- use coloured paper for some handouts to reduce fatigue in reading black on white ground all the time

Look out for psychological and physical effects:

- Red – is likely to speed up pulses and excite, can raise anger
- Blue – can be deeply calming (and send everyone to sleep)
- Green – can relax and bring a balance
- Yellow – for sun, sunny outlooks, happiness

Colours can attract attention and create moods because of these associations.

Some workshop activities to try

1. How we learn

This simple exercise helps participants to realize that they are themselves the active agent in how they learn anything. It can be done in less than 10 minutes.

1) Ask participants to jot down privately something they know they're good at. (this should take less than a minute)

2) Ask them to write on a post-it slip a few words explaining *how* they became good at whatever it is (this takes 2 or 3 minutes usually)

3) Ask them to stick their post-it slips with details of how they learned (not what they became good at) on a wall of the room (or a flipchart) (2 minutes)

4) Allow them a minute or two to compare their ways of learning, and discuss the common threads which always emerge from this exercise.

The learning *processes* almost always include the following;

- practice
- learning by doing
- learning by mistakes

And relatively few references to 'being taught'. An exercise on 'how people learn' at the beginning of a workshop, allows participants to see how you intend to value their own ways of learning during the workshop.

2. Introducing literature

In many subject areas there is a range of literature which would be relevant and interesting but which learners do not find and use. Here is an activity that involves learners in selecting and reviewing literature.

Take a box of books to the workshop, more than the number of participants. Choose them from the appropriate subject area but include some quite provocative ones, some well-known core texts and some unusual and less well known ones. Lay them out on a table and invite workshop participants to choose a book with which they are not familiar. Ask them to read it for about half an hour, silently, and to prepare to tell everyone else about their book in terms of if and how it might be useful or interesting.

Go round the group after the half hour giving each person three to five minutes to report back. Calculate the time this will need in advance – if the group is bigger than twelve people it will take more than an hour. You could have them report back in smaller groups then a brief plenary, perhaps with the 'edited highlights' from each group, or recommendations.

This method works very well with people who think they are too busy to seek out and use books and is often very revealing in terms of how quickly people can learn something from a book or get an overview of its contents. The review session can raise passionate discussion! A variation is to ask them to look for 'good things' and 'bad things' about the book they have chosen – this could be feasible in a shorter time, say, 15 minutes to skim the book, 5 minutes to decide on good and bad things, then a quick round to report back.

3 Theme bases

When you want to introduce participants to several different ideas or activities in small groups, a useful technique is to use theme bases. A base may be a table in the corner of a room, a group of chairs laid out ready for a discussion, or perhaps a nearby room with specialised equipment. The idea is that each group works for a set time at each base – so they might have 20 minutes at each of three bases in an hour. Each base has instructions and materials for a different activity.

This is how it can work:

- each base must be laid out in advance with all the necessary instructions and materials and probably numbered;
- all workshop participants are allocated to a group, two to six people in each works well;
- each group is engaged in a different activity for a set period of time at one of the bases;
- at a given signal or agreed time, all groups move on to the next base, the next activity, maybe in sequence.

When each group has visited each base, a plenary session discusses learning from each experience.

In a workshop for trainers, for example, these were the instructions:

- **Base 1** Discuss ways in which a trainer can evaluate the success of a session.
- **Base 2** Prepare a presentation on how visual aids can be used (a variety of materials and equipment should be available).
- **Base 3** Watch this video/DVD and make a flip chart of the main points of interest you draw from it (video/DVD should be left wound back and operating instructions handy).
- **Base 4** Here is a list of problems a trainer might encounter. Discuss, agree and write on a flipchart the solutions your group suggests.
- **Base 5** (A separate room with light-weight chairs and tables) Agree the best way to arrange this room for the training sessions described (list given of different topics, numbers, approaches, etc.) Make sketch drawings of your proposals.

The feedback session needs to be quite long because each group will have outcomes from four bases to present. This is a good technique for enabling participants to work at their own pace in a variety of activities, but it is essential that it is really well prepared.

Preparation Checklist for Theme Bases

- Match the number of activities to the number of participants and groups planned (perhaps have an optional one you can leave out if numbers are not really known in advance). Too many is tedious.
- Make activities suitable to last the same length of time – half an hour works well with about four bases.
- Make sure instructions are clear (try them out on a critical friend) because you can't deal with four problems at once.
- Make sure you have put out all necessary materials, equipment, tables and chairs.
- Each group will take different lengths of time in spite of your planning – put in optional tasks and be prepared to move some groups on fairly forcibly.
- The plenary is fairly unpredictable – some groups like to discuss every detail of their experiences.

The compensation for so much advance preparation for using theme bases is that the facilitator has very little to do while they are running and can observe and work with participants in a very relaxed way. It can be a good idea to build in a few breaks, or let participants decide their own break times within a general structure of 'moving on' times.

It is quite possible to run a session like this with forty participants and one facilitator – it would be an adventure to try with more – but if there are several facilitators available, this may be a good way of using particular specialisms, as bases can be separately facilitated mini-workshops. Similarly, you can have a mixture of staffed and unstaffed bases, particularly if some need skills demonstrated or technical help.

4 Mix a metaphor

Using a metaphor can help participants to take a fresh look at a situation or a problem. As an example, here is a metaphor applied to a workshop.

Think of something that has some parallels with workshop situations – possibly factories, building sites, places where people were busy doing things together or alone – in fact of course these are really only different types of workshops. Thinking of ideas further away from the subject of workshops, and involving other living things – animals, perhaps in a circus or a zoo; plants growing... this can lead to the basic idea of a garden. This can be a useful metaphor.

Imagine you have become the owner of a garden.

What can you do with a garden?

- Watch it and see what happens
- Dig it all up and start fresh
- Explore it, weed it a bit, tidy up
- Add things, remove things, replace things
- Build walls and fences
- Make paths
- Re-organise, make new groups, move things around
- Grow a variety of flowers, vegetables, fruit
- Listen to the birds and bees
- Lie back in the sun and contemplate
- Encourage butterflies
- Have a barbecue
- Frame the view, modify the view

You can probably think of lots more things you could do with a garden. Try to add to this list without thinking about how any of it applies to workshops – add a few more ideas of your own to this list.

The next stage is to apply the metaphor to the real situation, to ‘force-fit’ the garden ideas to a workshop situation.

What can you do with a workshop?

Watch it and see what happens – A bit slow and risks not a lot happening – probably everyone would sit around asking who was going to organise them.

Dig it all up and start fresh – You could try to dig out all the out of date or inappropriate knowledge, attitudes, skills, etc. then try to replace them with contemporary ideas. This raises issues of handling ‘unlearning’, re-learning or re-training, training for prescribed behaviour, ‘who knows best’, how experience is valued, etc.

Explore it, weed it a bit, tidy up – Find out what knowledge, skills and attitudes are held and test them a little, explore their relevance and appropriateness to now. Encourage everyone to consider how up to date they are; what historical ‘baggage’ could be thrown away, what new areas of learning could be explored now.

Add things, remove things or replace things – What can you add to enhance, broaden, add variety, interest, and depth. Help participants find out what they want to add, remove or replace. Ask them what they want to keep doing, stop doing, or do more or less of.

Build walls and fences – Explore how people have compartmentalised their knowledge and skills, how much they are able to transfer prior learning to different situations. Is it ever useful to have walls and fences round areas of learning? What causes these barriers? Can we remove them or avoid them if we want to? Can we make gates, doors, openings if barriers are too strong to remove?

Make paths – Create approaches to areas, stepping stones, routes. Acknowledge the need for ways into new areas of learning and look at how to make links from existing learning to new learning. Plan how people might approach new topics and activities and allow for emotional and attitude reactions to be examined, not suppressed.

Re-organise, make new groups, move things around – Make physical changes in how the room is organised, move furniture, equipment, focus points, who sits next to whom, which people work together. Change rooms, change chairs, sit on the floor, move tables out or in. Find different ways of forming groups, different ways of evaluating how groups work.

Grow a variety of flowers, vegetables or fruit – How can you help people grow? Is there a difference in ‘growing’ different types of learning? How can you make the ground fertile for learning? How can you encourage and protect the first fragile growth? How can you help the growth to strengthen and become independent of your nurturing?

Listen to the birds and bees – Get back in touch with our senses. Re-discover what is always around us but we have learnt not to notice. Concentrate on listening. Try different types of listening and discover how well people are listening to each other and how they can improve listening skills. Distinguish listening from hearing and explore how we select and interpret from available information.

Lie back in the sun and contemplate – Allow time to think. Time to feel comfortable, bathed in warmth, basking, reflecting. Think beyond the here and now, float, day-dream, imagine. Help people to go outside themselves, to visualise new and better situations. Use relaxation and visualising techniques.

Encourage butterflies – Some ideas are very fragile; some people make very tentative contributions. Sometimes these are not noticed and lost. Heighten awareness of this, encourage the group to notice and point out ‘butterflies’ and to enjoy, examine, use them more.

Have a barbecue – Sharing food with people adds a dimension to the relationship and can help to build trust and mutual understanding. Preparing and cooking food together increases this effect. Everybody has to eat sometime! Consider the arrangements for coffee and lunch breaks and whether you could make them contribute more to the workshop, add to the experience.

Frame the view, modify the view – Views change as you move your position, things change their relationships with other things and people. You can take broad and narrow views; look under and over obstacles or look through things. People sometimes look through the same ‘frame’ at everything and see only a narrow picture, miss all the richness of the environment. Taking different standpoints, role-play, case-studies can help people to see things differently.

There are all sorts of further possibilities for the initial idea of a garden, such as: make a pond, encourage trees, build a sandpit, put up a swing...

5 Unexpected questions and brilliant timekeeping

Always have a pad of post-its in your workshop kit.

Difficult questions

Someone asks a dangerous question. There’s an expectant silence. You know that if you answer the question, you’ll alienate at least half of the participants – or maybe you just don’t have an answer to the question. Bring out the post-its! Repeat the question – or write it on a flipchart or whiteboard. Ask everyone to write their own personal answer (or view) on a post-it, and stick the post-it (anonymously) on the wall – or on the flipchart. You can then spend a few minutes helping establish the overall response of those present. Even people with strong, minority views will feel better that their view has been considered, and is ‘visible’ to all.

Seventeen minutes can seem a long time!

When a ‘gap’ comes up unexpectedly, it’s always handy to have something useful to fill the time. Think back to any matters arising from the workshop so far, which have not been fully aired. Turn one of them into a question or proposal; write it on the flipchart, then give out the Post-its. Ask everyone to jot down their personal view or answer, and post it (anonymously) on the flipchart. With a bit of practice, this whole operation takes exactly 17 minutes of course!

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Section IV

The Creativity Project

The chapters in this section cover our experiences of and findings arising from the CETL funded Creativity Centre project. They include the issues involved in designing the Creativity Centre space, its fittings, flexible elements and technology, also what worked and why in encouraging more creative approaches to learning and teaching. In addition, it surveys the findings from the Creativity Development Fund and Creative Fellowships sponsored by the CETL to encourage creativity in learning and teaching within the participating institutions. It includes the results of interviews with teaching staff on their concepts of creativity.

Chapter 9

Designing a creative learning space

Richard Morris

The idea for an alternative, creative, learning space was born in 2003 when the two product design course leaders from the university's of Sussex and Brighton combined to write a bid for a CETL in Creativity. But this was, as yet, an undefined collage of thoughts, wishes and possibilities, a vision of what could be, without form but with intent. This chapter explores the design process at Brighton, once the bid was won and the challenge became a reality.

Designing the learning space at Brighton

The creation of an alternative learning space at the University of Brighton began, almost inauspiciously, in 2005, with a draft sketch generated by a project manager working with the university estates department. The proposal presented a relatively straightforward 'classic' square, classroom design incorporating block work walls and surface mounted electrical conduit but with a softer meeting space outside the main teaching room. It was tempting to adopt this design. It held the reassurance of housing no peculiar or hidden details, would work as a laboratory for observing teaching practice and its early availability meant that work could begin immediately. The proposal was however rejected, significantly because the development was intended to be not just a learning space per se, but an experimental space to support creative approaches to teaching and learning and this required further thought.

There was little enthusiasm from the university management or estates to provide an additional building specialist to create a new plan as this would add substantially to the project cost. However, it was also realised that the need to provide alternative ideas required pedagogic knowledge and justifications which were core to the nature of the project. It therefore became incumbent on the project's lead academic to provide this input.

What made this task difficult was a lack of immediately relevant information. Developments in pedagogic thinking provided much information around teaching practice but seemingly little, by contrast, about the kind of spaces that would support these educational progressions. It was therefore felt necessary to undertake primary research in this field even though it added significantly to the project workload. The research included consultations with students, academics, interior architects and designers. The tutors included product design academics which proved valuable because of their familiarity with space configuration, specification generation and the design process. Product Design also includes a variety of subject disciplines, and the staff were consequently familiar with a range of different teaching pedagogies.

The research explored issues ranging from what cohort size to aim for and what pedagogies to accommodate, to what type of entrance would work best and what flooring to use. The feel of the space was considered important and widespread use of organically formed modern materials was seductive since it seemed to provide the striking, innovative building that would be given much publicity and more liable to engender impressive and impactful feelings synonymous with creativity. In fact this argument of architectural impact was relinquished for something almost opposite – a neutral space, with pure, simple open and uncluttered

lines. This decision arose partly from the lack of robust information around what form of architectural features would be most impactful – a waterfall, a statuesque light, a mural, an atrium – but it was also clear from tutor discussions that one derivative space was unlikely to provide all of the experimental features needed to meet the demands of a widespread audience. It was therefore concluded that the main need was for an adaptable space.

CREATING A NEUTRAL SPACE



Technology was assumed as a basic integral requirement since the research indicated its pedagogic value, a message that was re-enforced by the visible investments and widespread global developments seen in educational technology. A significant section of the budget was consequently apportioned towards the inclusion of technology. Virtual, mobile and web 2.0 developments were particularly prevalent in literature, and elements of these were incorporated such as 3D stereo capability, ELGG blogging and streaming. Multi-media audio visual technology, high end communications capabilities and a wide range of supporting equipment was also added, including 3D mice, cameras, visualisers and electronic whiteboards. The role of the technology was not however confined to that of supporting information delivery but was specified with flexibility, control systems and features that supported the adaptability of the space.

Keeping the vision

The vision presented to the estates department was that of a physically neutral but technology rich and flexible space. It was, at its simplest, a 'white box', using a combination of physical and technological features enabling users to transform the room into diverse configurations to support the facilitating of their ideas around creative teaching and learning.

Maintaining the vision during the subsequent development phase was however demanding, often due to the tensions arising from the variant vocabularies and expectations of different project stakeholders. Fundamentally the academic/pedagogic vision was searching for an effective learning space, whilst the goal for estates personnel was mainly seeking efficiency in both the process and the outcome. Numerous practical issues also needed to be resolved, such as routing emergency evacuation, or ventilation air flow in a flexible space with moving walls, or providing environmental control and efficiency in a space requiring both air conditioning and opening windows. These issues needed time to consider adding further delays to the development process and increasing the pressure for all.

Under these circumstances, estates staff and building specialists with limited time and resources may have preferred to stick to standard guidelines and procedures, particularly if the vision of expensive and alternative learning spaces is not shared. This is understandable given the number of traditional classroom spaces and lecture theatres which are installed as a matter of course throughout higher education.

When faced with counter ideas from a group of resource constrained, experienced building professionals, it is easy to see why aspects of the vision might be dropped in favour of simpler or more traditional solutions. In the confines of meetings, especially given time pressures, such decisions can be made quickly and easily, but they are difficult to undo later. These pressures are heightened further once building works commence and where weaknesses in detailing and unforeseen problems regularly raise issues which require quick resolution in order to avoid additional costs. Compromises to the conceptual learning space were hence made, and it was, for example, disappointing that an evocative entrance portal was lost in favour of a standard doorway, or that a 'café style' landing was not included.

Despite some compromises, the learning space was, actually, largely completed as envisioned and this might be attributed to two main factors. Firstly, the robustness of the belief behind the academic, creative vision which meant that core ideas were not lost. In the early stages, although declining the initial estates design proposal may have delayed the building of the learning space by around one year and added significantly to staff workloads, it did lead to the insights and understanding necessary to argue for what was felt to be necessary during the development meetings. As knowledge grew and the vision clarified, where changes had to be made, it was easier to prioritise the importance of features and drop those considered to have less value.

TRANSFORMING
THE NEUTRAL SPACE



Secondly the process was made smoother by a flexible and professional estates department working hard to deliver the pedagogic vision. Where elements of the vision were lost these were due to safety or budgetary reasons rather than intransigence or taking of easier options. Success was aided by a supportive development team which included an academically knowledgeable technology company, a customer focussed building company and a highly knowledgeable interior designer all working together. This serves to highlight the importance

of effective tendering in establishing the right build team. The criteria for team selection should therefore be based around getting members who are capable of creative thinking and excited by the development of new ideas rather than sticking to design norms and the lowest cost. Even given the right team, it is however vital that the visions and aims of the project are clarified from the outset and this may have been a weakness in the Brighton project which resulted in some delay.

Reviewing the outcome

If the learning space was developed as envisioned, how did it actually perform? It can be said that outcomes were not all as expected. The flexible nature of the Brighton space was for example a necessary feature of the rooms' intrinsically experimental nature yet it became apparent from early on how valuable this flexibility was in the learning process. After three years of usage, it could not be said that one set of features or room layout was more preferred or more successful than others. What would be advocated is that any learning space seeking creative approaches to learning, particularly around social constructivist pedagogies should look towards flexibility as a basic and key requirement. Conversely, the technology provision was used to a far lesser degree than expected. When used well it had the capacity to be a powerful support for learning and the creative process, but on the whole, its operation seemed to require more time and trust than most tutors were prepared to invest in, and the most popular use of the technology was the off button. We have learnt that the use of technology should have been taken less on trust, and investigated with more vigour. It must have a purpose equated to pedagogic relevance and it must be no more complex than everyday technology so that users can easily engage with it.



Could the expectations have been more accurately predicted? Some years after the opening of the Brighton Creativity Centre there is now considerably more data available in the design of learning spaces including Gee (2004), JISC (2004) and Temple et al (2007). In many of the examples cited, it does seem however that the persuasive argument of impressionable architecture has won through, yet this trend does not sit fully in line with our own experiences. We have seen that the novelty of an impressively set out space can impress and engage – but soon wear off. Awe inspiring spaces, in moving students away from environments with which they are more familiar, may actually have negative effects on learning. They may hence not have the best features to support the pedagogy in a triumph of form over function.

**FLEXIBILITY IS THE KEY
TO ENABLING A VARIETY
OF TEACHING STYLES**

Jamieson (2003) states that, "Recent attempts to create new teaching and learning facilities on university campuses have often resulted in celebrated architecture that has proved to be educationally problematic". In a similar fashion, there may be even more pressures on designers to adopt and incorporate technology, yet we, like others, have found that technology for technology's sake is a mistake.

As Strauss (2003) says, "We keep pouring piles of expensive multimedia equipment into our classrooms and declaring them to be smart classrooms. We want our classrooms to be smart because of the mistaken belief that most learning occurs in classrooms and that smarter classrooms will somehow produce better learning. In many cases we have turned classrooms into complex tangles of technical gadgets".

What might therefore be surmised is that developers of learning spaces should not look towards 'off the peg' solutions for the design of learning spaces, or take the immediate options offered by architects and technology companies. They may not find the answers in literature either, but should instead look towards developing their own solutions based on their own researched needs relevant to issues of pedagogy, context, disciplines and institutional culture. Therefore questions to consider may include; should the space encourage better and faster information delivery; should it aid dialogue; should it foster reflection; what sort of technology and what sort of room features do this best?

It should also be said that even with the elements of the space that did perform as expected, there was still a great deal of learning to be gleaned. The ease of transforming the room played a major role in a tutor's decisions and ability to be flexible. The quantity of whiteboard space was fully utilised by tutors and students alike, and because it could be wrapped around the room it had an added advantage of taking away a natural 'front' the class providing a more social and inclusive environment. What might hence be surmised from this is that with any proposed development, a pilot space might be a valuable consideration. Many of the successful features in the Creativity Centre can also now be replicated at much lower cost such as; stick on vinyl whiteboard material instead of expensive wall panels; lightweight stacking furniture instead of more robust and durable furniture; twin projectors with independent computers instead of central servers with complex switching systems; even plants in planters on castors allowed quick but effective room transformations.

Whilst benchmarking the efficacy of any educational changes is notoriously challenging, our evaluation over three years of practice and experimentation in the learning space have been extremely positive and there are relatively few changes that the design team would have made to the design of the space. The payback in terms of learning cultures seems to make these spaces extremely desirable and effective. The question in the future might not be, should we develop alternative learning spaces, but just how damaging to learning are traditional classrooms and lecture theatres?

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Chapter 10

The Brighton Creativity Centre: space, technology and contents

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

This chapter contains a complete description, with comments, about the spaces that make up the University of Brighton Creativity Centre including all the technology, equipment, furniture and other contents.

The centre comprises two technology enhanced learning spaces, two offices and a large design studio, all of which open off a large landing. It is approached via a large well lit atrium and galvanised steel staircase that leads to a mezzanine floor, 'Up in the clouds' as one person described it. There is a lift for those with mobility problems. For first time users, the threshold of the centre often generates an air of expectation and excitement.



STAIRCASE TO THE CLOUDS –
THE WAY TO THE CREATIVITY
CENTRE

The naming of spaces

When the Creativity Centre opened we had not thought of naming our two spaces, but quite quickly some users began calling them by the very un-creative titles of the 'large teaching space' and the 'seminar room'.

It seemed necessary to name the spaces so that they represented something about the nature of creativity and the philosophy and ethos of the centre. The name chosen for the larger space was 'Leonardo' da Vinci because he was a polymath and was creative across the arts and sciences of his time demonstrating that creativity is ubiquitous and not just the preserve of the arts. The other space was named after Galileo the great astronomer because he had the integrity and courage to stand up against the dogma of existing thought and the power of the inquisition in defence of his knowledge and beliefs.

Thus Leonardo and Galileo represent that creativity is found across all disciplines and that its challenge to existing knowledge, structures, customs and beliefs can be liberating, enlightening, life enhancing, is inherently risky and sometimes dangerous for those who engage in it.

Leonardo

The main space is approximately 10 x 13 metres in size with 7 ceiling mounted projectors, 16 moveable and write-on double sided wall panels, a 5 metre curved back projection screen and environmental controls including temperature controls, coloured lights, a sound system and an Olfactory system.

Leonardo – physical space

Reconfigurable space – Leonardo is a space that can be left empty to allow free movement or, using the moveable panels, can be easily divided into a variety of smaller areas for group

work. It can seat up to 60 formally in theatre mode but is ideally suited to groups of 20 to 30 for interactive workshops. The walls are smooth plastered and painted white which gives both a blank canvas for users and allows projection onto any surface. When the bean bags are tucked behind walls, with its grey carpeted flooring and under ordinary lighting Leonardo has a rather corporate look which has made it popular for large formal meetings and staff and business training workshops.



THE WRITE-ON AND MOVEABLE WALLS

Write-on and moveable walls – There are 16 floor-to-ceiling, 1.2 metre wide white panels that move easily on an overhead track and can be locked in place when in position. These can transform the open space to create a series of working areas, projection booths, exhibition spaces etc. Groups can work in their own area using the write-on-walls to visualise their thinking and then push them into position for a presentation to the larger group. Though expensive (approx £1,000 each) these walls have arguably been the most popular and educationally successful elements in the space.

Chairs and tables – Sixty stacking chairs with pale grey plastic bodies, chromed metal legs and pale green padded seat cushions are shared between both rooms. They are light and modern in appearance, functional and

reasonably comfortable. There are 12 white folding tables which also look light and modern, these are easily moved and stored. Other wood effect folding tables, which we have inherited, are more stable but look rather corporate. This range of furniture has proved very effective in supporting a wide range of activities from formal presentations to workshops and exhibitions.

Bean bags – The bean bags, now 20 in number, were originally acquired as an antidote to the rather formal and corporate look of the space. Bright colours were a conscious choice to enliven the look and feel of the space even when the bags are stacked in a corner. Their arrival caused quite a reaction with some more conservative users making cynical comments. However, young students loved them and they have enabled a wider range of activities and approaches to be tried in the space. When combined with plants in an informal circular space, the bean bags, can create a more relaxed or 'laid back' learning environment where teachers and learners are sitting at the same level. There are some problems. People wearing mid length to short skirts can find sitting on bean bags embarrassing and those with restricted mobility or bad backs can find them impossible to sit on or get up from. Used appropriately they are however a very useful and effective addition to the creative space.

Plants – Twelve large (1.5 metre high) plants were bought and put in wheel-able pale grey planters. Aesthetically they soften the feel of the space by bringing in natural elements, some green colour and a variety of interesting architectural forms. Used alone or in conjunction with the bean bags, they break up long white walls and create and divide spaces more subtly than the moveable walls. They have been extensively used and proved to be a versatile element at a modest outlay but do need regular care and watering.

Games – As play forms an important part of the creative process the centre acquired a series of toys. These include a large floor standing wooden tower game, a giant Connect 4 and Lego. These have been used in cafes, creativity days and by many of the centre's users. The tower and Connect 4 are particularly popular to lighten a mood, create a group focus and much fun!

Flooring – The blue-grey patterned carpet tiles were chosen because they were hard wearing, looked neutral and would be resistant to stains etc. They also help to soften the sound in the space and minimise echo. They have hard wearing longevity, keep the space looking smart, (thanks to our helpful cleaners) and enable people to use the floor to sit on or relax on. They also mean however, that inherently it has to be a clean space so messy workshops become problematic or not really viable, which does limit the room's use. The mid tone corporate greyness works against the day light that brings a natural feeling to the space. The rubberised, white, interlocking floor tiles used in the Sussex creativity space reflect light around and allow for messy as well as clean activities, but do create a harsher sound. The choice that has to be made here should probably be based on intended usage.

Storage – There is comparatively little storage space given the amount of furniture such as chairs, tables and bean bags, though the two storage spaces are ample for all the technological equipment. This does make it difficult to clear the spaces completely or set up a formal space without a mountain of bright colours from the stack of bean bags. It is surprising just what space furniture takes up!

Leonardo – environmental controls

Coloured lighting – The main lighting in Leonardo emanates from eighteen light boxes set into the ceiling and covered with curved light diffusers. Each box contains five strip lights, one is white and the other four are red, yellow, green and blue coloured sleeves which can produce the visible spectrum. Ordinary white light is controlled from a bank of switches on the wall and the coloured lighting via the main touch panel. The controls can change the colour and intensity of each light box from a uniform colour across the whole space to a different colour in each box. Using the moveable walls it is possible to create mini environments with different atmospheres, for example harsh white lighting and minimal furniture or deep purple lighting and bean bags with the relaxing scent of lavender. Unsurprisingly fast rolling changes of colour have been found to disturb concentration. The coloured lighting system has been a well used and effective element of the space.

THE BEAN BAGS CREATE AN INFORMAL WORKING ENVIRONMENT



Temperature control system – Leonardo has a temperature control system allowing the temperature in the space to be varied from hot to quite cold. This has not really been used experimentally with groups but does provide an equitable temperature for users across the year.

Olfactory system – This system comprises two small electric heaters set behind a false wall with vents into the space, which are controlled from the touch screen where the timings are set. Commercial smells (such as wood shavings, engine oil, flowers or old socks) or essential oils (such as mint or lavender) can be put in the heaters and the effects can be noticed with about ten minutes. In action we have found the commercial scents rather crude, but the essential oils work very well. Mint has been used to stimulate people for after lunch sessions and lavender to encourage relaxation. Care has to be taken as the effects can be quite strong and some people may be allergic to or find some smells irritating. Some pharmacy undergrads carried out limited trials on the effects of certain essential oil smells on volunteers but otherwise usage has been intermittent.

Leonardo – technology

Systems and operation – The complex switching system, main operation computers and amplifiers which run the projection and sound systems in both spaces are situated in the adjacent office. These systems need to be turned on by a technician before the technology can be used. Most of the elements, including lighting, sound, projection and olfactory systems, can then be controlled by users from the small touch panel sited in Leonardo.



COLOURED LIGHTING
USED TO TRANSFORM
THE ATMOSPHERE

Projection system – There are 7 ceiling mounted projectors in Leonardo. 3 face the back wall and 2 face each side. Each of these projectors has a dedicated access point where a docked computer can send images to any or all of the projectors. Multiple images can be displayed for exhibitions, presentations or workshops. The university's system allows comprehensive web access to external material, broadcasts, podcasts, blogs, 'second life' and live input from other parts of the world. The projection system has proved very effective and useful in a wide range of educational and creative applications. Its main limitation is due to the rather low height of the ceiling which has made immersive projections from floor to ceiling impossible. The moveable walls that the side facing projectors use as their screens have a shiny surface and the images can suffer from glare.

At present we have not found a non-reflective white board surface, although it could be possible to make temporary screens out of textile and hang them from the walls. We originally intended to have laptop computers for each of the projector ports but security issues and the free acquisition of refurbished university desktop computer towers has proved practical, cost saving and environmentally friendly.

5 Metre, curved, back projection screen – This screen curves around one corner of the space, is room height and has all the access abilities of the other systems. It creates a spectacular image when running and an immersive feel when one is close. It is at its best used for films, still pictures or slides and images with large print. It was originally planned to be interactive with the other projector inputs but technical issues have meant that it is used as a stand-alone device. The original screen was a coating on Perspex but two versions of this failed. We had a flexible material screen temporarily but now have a new solid screen from a

German manufacturer. Unfortunately there are considerable focussing problems for the two projectors and their compensating software, so that small detailed diagrams or small font sizes on packed power point slides can lose definition.

Sound system – The space has a comprehensive, sound system and each projector, including the curved screen, has dedicated speakers. Given the size of the space it is not really practical to run more than 3 different tracks at any one time and this is only possible when the moveable walls are used to separate the sound spaces.

Observation system – There are a series of small tracking web cam cameras set around Leonardo which were originally installed as a potential research tool. They can only be operated from the technician's controls in the main office. The system can be set so that (with participant's prior knowledge and agreement) activities in Leonardo can be viewed from the office or Galileo. As the quality of the images is not great and there is no sound this has not proved useful as yet, though it could have its applications for the right researcher.

Free standing additional equipment – The centre has a variety of additional equipment which can be used in conjunction with the main facilities.

- **Interactive whiteboard** – Though well established in schools, both the practical difficulties of using this in the centre and the time needed for teachers to become competent have meant that this resource has been little utilised. Teachers' investment in time to become skilled at using the interactive whiteboard is not worthwhile if they are not in general use around the university.
- **Short throw projectors** – These free standing devices which can create a wall sized image from just a few feet away from the projection surface, were originally bought to create an immersive environment. Whilst this has proved problematic, they have been used regularly in exhibitions and displays and by many of the product design students.
- **Portable visualiser** – This acts like a digital version of an epidiascope or OHP, in that it scans any live image (even a moving hand) on its bed. It projects onto a screen enabling the user to show drawings or notes and even create images as they go and has been used to show working sketches of designs or images from books etc. to larger groups. Its range of applications and portability has meant that it has become popular with many Centre users and faculty staff.
- **Digital video cameras** – The Centre has several digital video cameras for recording events. They have been used to take stills of events and work generated and occasionally to record presentations or whole events. It was originally thought that they would be used as observation tools in research but this has not been the case so far.
- **Digital camera** – The Centre has a small digital camera which has proved remarkably useful in recording events, workshops and work generated in sessions. It has been particularly useful in documenting peoples' work on the write-on walls during and after sessions; these images can be easily downloaded and printed for distribution to participants.
- **E-beams** – We have recently acquired an e-beam system which can turn any flat surface into a whiteboard, this has not yet been explored.
- **Air mouse** – The wireless air mouse can be used with both projection systems in Leonardo. It is great fun as a drawing tool on the curved screen but it takes considerable practice to become accurate, so people usually control the cursor with a desk top mouse.
- **Computer programmes** – Freehand drawing programmes used in conjunction with an air mouse on the curved screen and a Wii with various sports options have been used in a similar way to the physical games to encourage play as part of creative processes.

Galileo

The smaller of the two creative spaces is painted white, is approximately 6x8 metres in size and can seat up to 40 people theatre style or 15 to 20 for a workshop. There are half height windows along one of the shorter ends, a large sky light runs the length of the room and the whole room can be completely blacked-out. There is a 5 metre write-on wall plus other smaller white boards. The room shares furniture with Leonardo and has the same blue-grey carpet tile floor covering. Galileo is often used separately from Leonardo as a seminar or tutorial space, for small workshops, meetings or an exhibition space. In conjunction with Leonardo it is also used as a break out or presentation space and as social space serving refreshments for larger events. The size of the room is especially suitable for small groups reviewing designs and developing ideas; it feels intimate yet is large enough to lay out a lot of work and view it all at once.

The technology in Galileo shares the main computer and switching system and is controlled partly via the touch screen in Leonardo.

3D projection system – The two overhead projectors take the signal split by the More3 programme and project two offset polarised images onto a specially coated screen. The viewer wears polarised glasses to observe the 3D image. Given good quality images the 3D effect is very realistic, cars spin gently in the room well in front of the screen – some images have made viewers duck! Images can be revolved apparently in space, objects seen from all angles and landscapes walked through. The system is potentially useful for designers, engineers, town planners and game designers amongst others. Up till now there has been little use of this system due to the time needed in learning how to use it effectively. However the user interface has been improved and we now have a technician able to support the system which we hope will encourage people to explore its use. One issue we have noticed is that after about 15 minutes the polarised glasses can cause headaches. This is partly an age issue with younger users less affected and less of a problem when image overlap settings are optimised which takes time and expertise.

Stand alone projector – There has been quite a lot of demand for Galileo for presentations and seminars. The 3D projection system requires all the Centre's systems to be operating so a separate overhead projector with its own connections was installed. This simple projection system can be used without technical support and some staff regularly use it when there are room shortages and they need a seminar or presentation space.

Sound system – There is a sound system in Galileo which operates through the main computer and switching systems. Because of the size of this space the system can only play sound from one source at a time.

An evolving Space

The Creativity Centre is an evolving space and when budgets allow, there are updates to programmes and hardware and new furniture is acquired. It should be noted that such complex technology does require occasional maintenance by the originating AV company. There are also considerable ongoing costs for items such as projector bulbs, failed hardware or programme updates.

Chapter 11

Our experience of technology within the Creativity Centre

Steve Kilgallon

"Anyone can make the simple complicated; creativity is making the complicated simple."
Charlie Mingus

Introduction

Much research has been done over the last ten years emphasising the importance the physical and technological environments in which learning takes place. In 2005, the HEFCE Strategy for E-learning emphasised the use of technology to 'enable institutions to meet the needs of learners and their own aspirations for development' and to 'promote learning, research, innovation and development' in order to transform higher education. As Plenderleith and Adamson (2009) observe, the demise of the UK e-University by 2004 meant that its funds could be re-allocated to the wider HE sector but that HEFCE realised that there was a 'cold wind blowing though e-learning' with some disillusionment and scepticism across the sector with the idea of e-learning as a delivery strategy.

However the drive for technology in education continued, fuelled as much by its inexorable rise and use in the wider world as any conceptual development as a tool for learning. In its report 'Innovation Nation' (2008) the Department for Innovation, Universities and Skills saw new technologies as enabling and accelerating new forms of innovation, with IT enabling 'accumulations and analysis of large pools of data which [have] become a powerful driver of knowledge creation and innovation'. The Building Schools for the Future (BSF) program (Department for Children, Schools and Families 2007) focused nationwide attention on how the government set about rebuilding schools to take advantage of new technologies and ways of teaching and learning. Similarly the importance and prominence of technology in higher education was highlighted in the HEFCE publication 'Enhancing learning and teaching through the use of technology' (HEFCE 2009), which mentions the 'The transformative potential of technology', and how 'appropriate use of technology is leading to significant improvements in learning, teaching and assessment'.

Concept of the Centre

It was in this background of the rapid rise of technology but confusion over how it should best be used in education, that the concept behind the Creativity Centre was born in 2005. The main aim was to create a technology enriched environment in which both the physical space and the technology were flexible, and able to adapt to, and encourage, different styles of learning and teaching. Flexibility in the space was achieved using a variety of lightweight furniture and sixteen large moveable write-on-able walls, enabling a multitude of configurations within a single large space. In choosing this wall system and furniture it was easy to see the benefits and uses as a counter to the prevailing teaching classrooms and lecture theatres with their fixed or heavy furniture, creating inflexible space. However, the technology provision

was more difficult to plan for, as there was little information about, or experience in designing or working in a highly technologically advanced environment within the education sector. After much research into this area it was decided to tender out the technology contract. A specialist audio visual (AV) company was appointed which had considerable experience in producing interactive displays at visitor attractions and museums. The development of the technology was a complex balance between the design team's vision, and the experience of the contractor and their knowledge of how the technology would work. This had a great advantage in that we received a fully working coherent integrated system, however subsequently we have discovered several unexpected consequences with this approach.

The technology

The technology within the Centre consists of seven ceiling mounted projectors, eighteen light wells, and series of speakers, each of which can be controlled individually or as a group to give either one theme to the whole space, or several themes corresponding to different areas created within the larger space. The room also contains a large (5m x 2m) rear projection curved screen, on which hi definition images and video can be displayed to give an almost enclosed audio visual experience. To complete the sensory environment there is an olfactory system that delivers fragrances into the room to enhance the creation of particular atmospheres.

At the heart of the technology in the Centre is a video/audio matrix switcher. The switcher has the capacity for 32 input channels, and 32 output channels. This means that we can have 32 distinct input devices feeding 32 separate output devices. The input from any device can be outputted through any number of projectors or speakers, giving us the ability to produce multiple outputs from multiple inputs, or a single output across all the projectors and speakers.

The technology in the Centre is controlled via a touch panel screen which gives a diagrammatical view of the room, from which input(s) can be selected and directed to the appropriate output devices. Around the walls in both rooms are ports where laptops, music players, game consoles, etc can be plugged in and used throughout the area. Once plugged in the output from these devices can be directed to whichever group of projectors and speakers that are chosen.

The problem of complexity

Our decision to go with a specialist AV company has been a positive experience but has had several unforeseen consequences. On the positive side we received a fully working system almost from day one, and since the control system was a standard 'off-the-shelf' product, the reliability is good. The appeal of having one integrated system that could be controlled and manipulated from a central point was very appealing as it offered a simple way a controlling many devices. However this apparent simplicity came with several unexpected problems. Firstly, the system is reliant on a back office controller (matrix switcher) which is complicated to turn on and configure and hence requires a technician to start it up for each session. The AV company suggested keeping the controller permanently switched on which is how it is operated in most museum settings. Secondly, there were issues of noise and temperature in the office where the controller was mistakenly situated. Thirdly, there are environmental and sustainability concerns about power consumption during the evenings and weekends if the system was left running. It was also felt that in order to get confident with the operation of the controller it was better to switch it on and off daily. Finally, the main issue with a fully integrated system is that there can be situations where the failure of one piece of equipment may render the whole of the system inoperable, and depending on maintenance contracts or budgets, there may be a significant delay before the problem is rectified.

The 'back office' complexity is compounded by what has emerged as the unintuitive nature of the touch panel control system. The original idea was that tutors would be shown how to use the system prior to their session, and they would then be able to configure the technology as

and when they needed. In practice tutors have generally not been willing to engage with the control system, due to a combination of its complexity and their inability to give the amount of time needed to get comfortable with the system. Therefore we have a situation where someone who is very familiar with the system, such as a dedicated technician, is essential to turn it on, and configure the technology at the start of and throughout the session, which makes support costs for the centre potentially expensive.

It is interesting to note that our sister centre at Sussex University decided to design their own technology provision and control systems, which has resulted in a much more bespoke and flexible system, but suffers from the same issues of complexity in its control and use. They too need technical support for most of the activities in their centre and the bespoke nature of their system requires more ongoing maintenance than the Brighton technology.

The technical provision of both sites has suffered from over complexity. There was perhaps not enough user-testing of the system to determine its usability before we opened due mainly to the prolonged building phase of the project. In the final rush to complete the Centre compromises were inevitably made. The building work and technology installation were completed on the Tuesday, and we opened on the Wednesday with the AV people running the system. Although the technology in the Brighton system has worked well, been reliable and well supported by the AV Company, on reflection, and with the benefit of hind sight, more thought should have been given to how the potential technology on offer would serve learners needs and the pedagogic philosophy behind the vision. However, it is important to bear in mind that the whole project that is the Creativity Centre was, and is, a voyage of discovery and an experiment in space and technology, and there is in such circumstances a difficult balance to be struck between cutting edge experimentation and knowledge of what works.

User's interaction with technology

As mention previously, the control of the centre's technology via the touch panel is not simple, and has had the effect of distancing tutors from wishing to manipulate the environment themselves. Without several hours practice people are not confident in using the system, and most users are not prepared to learn a system that they will only be exposed to for a limited time. Even tutors who are timetabled for prolonged periods within the Centre tend not to engage with the manipulation of the system very often. The main reasons for this seem to be a lack of time, and a fear or wariness of using the technology. This can lead to a situation where a technician becomes a major part of running a session which can tend to make tutors reliant on a third party to configure and manipulate the technology and space. This in turn can reinforce a lack of user confidence and an unwillingness to experiment and take risks which is opposite to the main purpose of the space.

To counter this effect, the Creativity Centre staff have taken a proactive involvement in the planning and delivery of the sessions so as to contribute more fully towards the learning experience. We have moved away from the idea of having purely technical support staff who are solely responsible for keeping the lights working, to using people with good pedagogic understanding, who can advise on the use of technology and help plan and if needed facilitate within the sessions.

In spite of the problems, there have been many examples of effective use of the technology and space. The Sussex Learning Network ran sessions to help staff get to grips with and experience new technology. The space was split into several areas where participants could try out video conferencing, blogging or 'second life'. Similarly, pharmacy ran sessions for undergrads relating to giving up smoking using a variety of approaches enabled by the Centre instead of a formal lecture. The space was divided into several areas, one with information posters, one with products, one with a rolling power-point giving lecture notes and another with a variety of video clips and teacher led discussions. In each case the learners found the process effective and interesting and the technology was a strong enabling factor.

One of the main challenges tutors face in the Centre is how to use the technology to enhance the teaching and learning process without letting it dominate the proceedings. It is very easy to get beguiled with the technology, and fall into the trap of entertaining the students rather than stimulating and challenging them. Several tutors have worked hard and produced very creative ways of presenting information, but with their students passively watching the performance, rather than actively engaging with the content. The Centre provides a challenge and an opportunity for experimentation, and encourages tutors to reflect and expand their practice within a supportive environment. Hopefully by playing with their ideas within the Centre, tutors can take new and transformative practices back into their classrooms.

One of the main factors limiting some tutors interaction with the technology has been the lack of time they had to plan and experiment. With increasing student numbers and associated workloads, there is an issue as to whether tutors have the time to experiment and work through learning objectives, so as to devise new ways of approaching their subjects in order to stimulate creativity.

It is also interesting to note that some of the most innovative and creative sessions run within the Centre, have been ones that haven't used any technology at all, but have been planned by tutors prepared to experiment and address the fundamental questions of "How can I facilitate my students to become better learners?" Perhaps when tutors stop focusing on the technology and start focusing on the learner, there is more freedom for creative things to happen.

If we could start again

When the Centre was being designed we tried to predict what tutors would want to use, and how they would use it, and then tried designing this functionality in from the start. This raises an interesting question as to whether tutors in the Centre are using the technology they really want, or are they just using the technology because it's there? In hindsight it may have been better to simply start with an empty flexible space with the moveable write-on-able walls, and then add the technology gradually. This idea of an organic responsive growth of the technology in response to observed need may have created a more responsive and useable system, with a greater sense of user ownership. However, the 'bells and whistles' approach has created its own positive challenges and outcomes.

In order to make spaces like the Creativity Centre more sustainable and user friendly, designers need to make the technology understandable and useable with a minimal of written guidance so that potential users do not have to rely on any technical help. It should be obvious on entering the space how to turn equipment on and get it running without having to read a manual. The very exercise of trying to achieve this scenario should focus the minds of the designers onto the important issue of how the space and its technology are to be used to promote learning instead of creating 'eye candy'. This process would need the engagement of potential user groups at the design stage to go through scenarios of operation, but would hopefully result in a much more user friendly environment.

Conclusions

No matter how fantastic and flexible the space and technology is, ultimately the learning experience is determined largely by the education philosophy of the teacher and their skills in engaging students in learning. A good teacher will still be a good teacher in most environments. Putting an inexperienced teacher into a "fantastic" learning space will not on its' own produce better outcomes or make them a better teacher.

Technology is just another tool for learning. It is important to keep the focus on processes which enable students to examine perceived knowledge and explore new ideas, so that they can form their own opinions and gain a personal understanding of their subject. Multiple large screen projections, coloured lights and web2.0 may be seen as being "sexy" and engaging, but without careful incorporation into a holistic learning experience, they are just gimmicks.

Both designers of technologically enhanced learning spaces and teachers need to be clear about the choice of appropriate technology and how it can be used to enable learning. If a space such as the Creativity Centre is to be successful, pedagogic support is needed just as much, if not more than, technical support. We have learnt that much can be achieved through a constructive partnership, where support and guidance can raise expectations, identify opportunities and support choices about when to use the Creativity Centre and when to use an “ordinary” teaching space.

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Chapter 12

The Creativity Centre: what worked and why

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

The findings expressed in this chapter arise from observations and research on and with a wide spectrum of Creativity Centre users over the last three years including staff and students from product design, engineering, pharmacy, teacher training, creative writing, IT, the Centre for Learning and Teaching and many more. Sessions have ranged from teaching on undergraduate and master's courses, to workshops for staff development and various industries, conferences and creativity days.

From this wide research base there is strong evidence that those teachers and learners who have accepted the offer and challenge of exploring their potential in the Centre have found it supportive of their endeavours. The nature of this chapter and its headings, such as newness and flexibility, has largely been suggested by the observations and comments of the Centre's users.

Newness, novelty, difference and openness

The Creativity Centre has a significant impact on people walking in for the first time, especially those who are used to more conventional university classrooms. The impact begins with the light and open atrium entrance and continues with the novelty of the colourful and well lit Leonardo. People felt that they were being treated to somewhere special and this may well have contributed to heightened anticipation and increased expectations from both learners and teachers. Born out by his experience in the Centre one facilitator thought there was an important quality issue at play, a better quality environment produces better quality responses. A finding that also been noted in the design of hospitals, sport stadiums and civic spaces.

The JISC report 'Designing Spaces for Effective Learning' (2004) identifies a creative learning space as one that can energise and inspire learners and tutors. Many people described their experiences in the Creativity Centre as refreshing, exciting and inspiring and the space as buzzy & lively. One teacher said 'it supports having a good time'. We could interpret these comments, in part, as the potential of the Centre to generate energy. There is an opinion that thinking outside the constraints of the norm requires more psychic energy; in fact a high level of physical and mental energy has been found to be a feature of creative individuals who make significant contributions to their field (Csikszentmihalyi, 1996). The impact of the coloured bean bags and lights, the projected images, the music and the curved wall, individually and in combination, may well help stimulate the energy needed for intuitive and open minded exploration that breaks boundaries.

As an education space Leonardo is particularly good at facilitating experiential learning and opportunities for embodying concepts. For example, education students were able to place themselves in a physical representation of Kolb's learning cycle, design students preparing to exhibit their designs professionally were able to replicate a formal exhibition space and

specialist ITC teacher education students recognised the way that the Centre embodied concepts they were addressing in a module on learning spaces.



The comparative generosity and openness of the space in Leonardo was seen as crucial in the generation of new ideas. Here we can see analogies between the transformative potential of an empty physical space such as the ‘black box’ rehearsal room, and an open and receptive mind; the absence of other people’s ‘baggage’. For business and entrepreneurship workshops on idea generation, one teacher thought that a clean, clear, white, light space with write-on walls was more effective than cutting edge digital technology.

The centre’s newness and specialness has played an important positive and somewhat unexpected part in attitudes towards it and participants’ experience of using it. As the centre has evolved and its reputation has grown, a culture of expectation has emerged which may persist even when the novelty and newness have worn away.

From our findings we would suggest that when planning generic learning spaces it is most important to identify the minimum or optimal requirements that will support teachers in trying out new and novel strategies; new and novel strategies not just for their own sake but in order to be responsive to the changing and emerging needs of learners. It may also be necessary however, to instil these generic spaces with the expectation of and support for experimentation, in essence a licence to be creative.

NEW SPACES TO HELP
CREATE NEW IDEAS

Flexibility

The Creativity Centre can accommodate a range of events from formal conferences to meditation with everything in-between, including workshops, envisioning, virtual exhibitions and on-line gaming. Leonardo in particular can be set up to provide a simultaneous variety of learning experiences and can be rearranged very easily and quickly to accommodate these during sessions. This flexibility which enables a fluid ongoing response to learners’ needs, has proved to be the most significant and valuable aspect of the Centre in terms of learning and teaching.



FLEXIBILITY TO SUPPORT
ACTIVE MEETINGS...



...OR GROUP WORK

The lightweight tables and stackable chairs have been important in terms of the flexibility of the rooms. Standard university tables are bought for longevity and typically weigh around 27Kg which is the limit of a safe singular lift recommended for men. At 18Kg the Creativity Centre tables are the safe weight recommended for women to be able to carry over a short distance. The purchase of more flimsy furniture may be counterintuitive to institutional purchasing but it places the emphasis on practical use and learning rather than financial prudence.

The moveable walls are probably the most crucial elements in configuring Leonardo to meet a wide variety of learning needs. For example, by setting up Leonardo with separate booths in which discrete activities can happen simultaneously, students can be proactive about their learning. They can move from booth to booth at their own pace, choose where to direct their attention, touch and examine products, look at slide presentations, watch videos and overhear and join in conversations. Most students thought that taking more control of their learning made it easier for them to concentrate on, learn and recall things. Some learners, more used to formal lectures, found this approach made them feel less secure and felt it was more difficult making notes as they were walking around. This issue could be overcome by regular use of these approaches and a combination of formal and informal teaching strategies.

The write-on aspects of the moveable walls are very effective in supporting group work. Unlike the writing on flip charts, the writing on the walls can easily be rubbed out and re-worked, which reduces the pressure on individuals when making their thoughts public. Some teachers felt that the public aspect was an advantage because students had to be clearer in their thinking before making it visible to all. The number and size of the walls with 32 x 2 metre high sides, means that usually everyone can use a pen at the same time and the contribution of ideas is therefore more democratic. When working in groups the walls not only provide a defined group space, but their readability is a valuable feature in keeping track of the development of ideas. They allow groups to see the progress of their thinking and they make thinking and creative processes literally more visible. The use of a digital camera to record writing and images on the panels means that the information can be captured, printed out and shared after the session.

Atmosphere

Atmosphere is an ephemeral but important aspect of the learning environment and is strongly affected by physical surroundings. The flexibility of the physical and technological elements within Leonardo allow for a considerable range of experimentation with the learning atmosphere. For example pale yellow or green lighting gives a fresh light feel when welcoming

participants to sessions, deep purple or blue light, with bean bags in an enclosed space, can create an intimate and relaxed atmosphere, and harsh white light in a white walled box can produce a clinical feel. Scents can also have a powerful effect with lavender oil being used to aid relaxation and peppermint to help enliven a group after a lunch break.

COLOURED LIGHTING CAN HELP CREATE SPECIFIC ATMOSPHERES.



One of the most frequent comments to emerge from the feedback data was that students appreciated the relaxed and informal atmosphere of Leonardo and noted a positive impact on their learning. A relaxed atmosphere appeared to be significant in helping students establish a receptive state of mind free from the plethora of everyday concerns that can make concentration difficult. For students the advantages of Leonardo lay in the way the bean bags, plants, the curved and moveable walls create an informal, relaxed, even comforting atmosphere. They found it easier to ask questions in this environment, feeling less judged and therefore able to contribute more.



SPOT THE TEACHER! THE USE OF BEAN BAGS CAN CREATE A PHYSICAL DEMOCRACY

Effects on the learner/teacher relationship

Interesting observations emerged on the significance of student-teacher relationships, which according to Jackson (2004) needs to be sensitive, trusting and responsive, in order to support engagements with creativity. Comments from students and staff on the positive effect on relationships of the informal and flexible surroundings indicate that the Centre has the capacity to support and encourage learner centred approaches to learning. In not having an obvious front, the space immediately changes the power relationships set by the usual classroom or lecture theatre which places the teacher at the front with students all facing them. It allows the potential for a more democratic relationship between the teacher and learners.

Teachers commented on Leonardo's capacity to support the open minded thinking and reflective discussion necessary for effective group work. They noticed that students were more willing to share experiences, try out new methods and exercises. For example students doing meditation as part of a creative writing course did not appear to feel embarrassed or awkward. It seems that Leonardo can support a combination of risk and relaxation, a safe yet creative environment. Students did recognise however, that the attitudes of learners and especially teachers were more crucial in shaping a positive atmosphere for creative learning.

DEVELOPING DESIGNS.

The bean bags also played an interesting role in student/teacher dynamics. They were used more by students than by staff or facilitators. Older users often said they found them difficult to get in and out of. One teacher thought that if everyone was sitting on bean bags, the time spent trying to get comfortable helped bond a teacher/student group, in the sense of sharing adversity. There were several comments about how, when everyone was sitting on the same level, this surreptitiously challenged institutional hierarchies, especially the inherent power of the teacher because, 'No one can be dignified on a bean bag'.

The flexibility of the space also enabled teaching processes which allowed for a greater interactivity between learners and a more direct active engagement in the learning process and thus taking the teacher out of the main student focus.



What kind of learning and teaching does the Creativity Centre enable?

Philosophies and approaches to learning and teaching range from the traditional knowledge transfer, teacher centred model, to one where learners are encouraged to create their own knowledge and understanding through paths of personal and group inquiry. The latter includes the process of learning itself. The Centre was developed in order to facilitate learner centred experiential and transformative processes, usually made difficult if not impossible in conventional classrooms and fixed lecture spaces.

The Centre operates very well for a wide range of learning aims, for example – to generate ideas, explore design problems, develop proposals, demonstrate technology, learn experientially, network, collaborate and co-operate. Strategies include group work, exhibition, role play, simulation, e-learning, knowledge cafés and digital social networking. The centre is at its best as a generic learning space for group processes and responds very well to the differing and changing needs of groups working together.

SPACE FOR GROUP WORK.



Leonardo in particular has the capacity to support approaches that need specific physical or emotional atmospheres, for example, the confusion of a dark and noisy nightclub or the intimidation of a magistrate's court for training police recruits. At the other end of the spectrum, centre staff and facilitators have noted striking examples of trust building and personal disclosure in the relaxed and informal environment of Leonardo.

The Centre appears to have succeeded in encouraging creative and divergent thinking and is beginning to counter the traditional values and existing judgements inherent in institutional disciplines and hierarchies. In general people felt they were somewhere completely unlike other parts of the university, somewhere quite special which was dedicated to, and gave permission for exploring, new directions and perspectives.

It is however worth noting that in spite of its inherent potential as a creative learning space, it is largely the teacher/facilitator's educational philosophy and relationship with participants which determines the outcome, the centre can still be used to lecture to 60 people in serried ranks.

What kind of learning and teaching does the space not enable?

Although for most users the Centre has offered very positive experiences, for some users who regularly work in studio spaces and what could be called creative environments, the space has critical drawbacks. These range from a lack of natural light to not being able to make a mess because of the carpeted floor. Others found the overall atmosphere of the Centre too formal and corporate, especially the carpet which casts a grey atmosphere across the room. There were comments that when spending long periods in Leonardo the lack of natural light and the low ceiling become somewhat oppressive and that better access to the outside would make a big difference. For some the bean bags were seen as superficial tokens of creativity, possibly with associations of primary school. Like all learning and creative spaces the Centre cannot be all things to all people. It is not a good science lab, art studio or lecture theatre but it is an excellent group workshop space.

Challenges and satisfactions for teachers/facilitators

For many teachers/facilitators, working in the Centre posed considerable challenges and risks which prompted them to reflect on their regular teaching situations. They found themselves considering how to create a stimulating, friendly, welcoming and relaxed environment and thinking about what approaches would promote interest, curiosity, sharing and feedback. For example one teacher said he was beginning to understand the effect on students of regularly spending all day sitting down and listening. Through a session in Leonardo he had become aware of the benefits for students of being able to move around, choosing where to pay attention and when and how to engage. He realised that, although it seems obvious, 'you don't have to be sitting down to learn'.

This raises the question of whether this kind of reflection is normally limited by the constraints of regularly teaching in conventional classrooms. A few teachers mentioned how frustrating it was going back to work in these environments after the Creativity Centre. There were also examples of the Centre being used in very conventional ways, where facilitators stood and talked while participants sat at tables all day, which suggests that a new environment does not necessarily in itself prompt reflection on teaching strategies. An important element of the Centre's use has been the challenge to experiment that Centre staff have made to those wishing to use it. This challenge and the support offered has had positive effects in most cases, although not all staff have been willing to deviate from a didactic 'telling' mode.

It was to be expected that there were teachers who said that working in the Centre had little impact on changing their teaching approaches, but its features, largely its flexibility, made it possible for them to teach in the way they wanted. More unpredictably there were others who said that working in the Centre meant they could explore strategies they were fully aware of but had been unable to try out because of the inflexibility and formality of most teaching rooms.

Teacher/facilitator planning and preparation

Many Centre users raised the problem of increased planning and preparation time in relation to both enhanced technology and new teaching strategies. In order to give experiments in the Centre a chance of success, teachers felt they needed significant extra or even excessive planning time. For example, one teacher spent a great deal more time than usual planning and setting up Leonardo, so that students could work in small discussion groups analysing relevant research literature. The success of this was apparent in their ability to critique research papers in a later examination. He, like others, thought the results were worth the time investment but would be unlikely to continue working in that way unless there were enough suitable spaces available in the university.

Others said that having experimented with new strategies in the open and easily manageable space of the Centre, that they felt more confident about adapting them to conventional teaching spaces. Normally they were reluctant to experiment in classrooms full of furniture because of the enormous amount of effort and energy it took to prepare them, sometimes only to have to rearrange them during or after the session.

Beyond the Creativity Centre

'Being in this space has not changed my method of teaching it's just enabled me to teach in my preferred style'. This was the response by one member of staff who found that the flexible space and light weight furniture allowed her to operate in a workshop mode which she found nearly impossible in her usual classroom setting with heavy furniture tightly packed in serried ranks. Many teachers commented that to put the extra time into working with the technology or to continue teaching in a learner centred way that the institution needed more flexible learning spaces and reasonable change over times to allow for re-arranging of the furniture.

Whilst flexible learning spaces may be more effective in engaging learners as active participants in the learning process, they need to be larger than normal classrooms to allow different layouts and need longer changeover times. They therefore seem to pose a less efficient use of space relating to calculations of students occupancy per square metre per hour! Though there are undoubtedly, practical space issues here, the underlying issues are of educational philosophy, of didactic verses learner centred approaches to teaching and learning. For greater learner engagement to spread across the campus both endemic knowledge transfer philosophies and learning spaces need to be changed.

Developing a creative community

In encouraging creativity in learning and teaching through its various activities, the Centre has become the hub of a creative community within the university. It has become a place where staff and students can come and take risks and experiment in a supportive environment, where being different or trying out a fragile idea is not ridiculed but encouraged.

We have found that creativity flourishes with challenge and support but that it is becoming more difficult to engage with in an increasingly regulated education system.

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Chapter 13

The Creativity Development Fund

Paul Martin and John Rimmer

The Creativity Development Fund (CDF) was set up by the InQbate CETL to provide funding for the development and enhancement of innovative learning and teaching, and for research into the nature of the creative process in existing courses and activities. The CDF was primarily used to release academic staff to allow them time to develop, explore and put projects into practice. Bids were made by staff at both the University of Brighton and University of Sussex and a wide diversity of projects were funded.

The Creativity Development Fund

The CDF was launched in March 2005, providing up to £10,000 for tutors to explore creative approaches to Teaching and Learning. Over the first three years of the CETL there were three CDF funding rounds, and approximately £200,000 was spent on 31 projects across both universities, spanning the entire curriculum.

The bid process was relatively simple and supportive, and interested parties could try ideas out on the InQbate team and get help in formulating bids. All bids were read by a cross section of team members and choices were made largely on creative merit, but also with reference to encouraging a wide range of disciplines, interdisciplinary projects and a wide range of ideas.

The range of CDF Projects funded

The funded projects covered a wide range of disciplines and there were several interdisciplinary project ideas too. These included projects such as:

- Quantifying the teaching & learning value of 'Fab Labs' in Engineering & Design at Sussex;
- Specialist Fashion Design Development and Pattern Cutting CAD System software in Architecture & Design at Brighton;
- Creative Space, a writing retreat for academics in Education & Sport at Brighton;
- The Overalls project in 'Access to Art' based in Art & Communication at Brighton;
- Bridging certain distances with mobile media in Media at Sussex.

The following examples demonstrate both the range of projects and the type of learning which has arisen from them.

The **Creative Medical School 'Learning to look'** project aimed to teach medical students observation skills through learning photography. A pilot course for 3rd Year medical students was developed and run to help them to develop visual awareness and critical thinking through the practice of observation in photography and medicine. It aimed also to discover if there were any connections between the skills needed to practice medicine (particularly diagnosis) and those needed to produce photographs and if doing photography could enhance observational skills. The project extended and enriched students' learning experiences by providing them with the opportunity to participate in a series of artist led practical and critical

workshops that introduced them to contemporary documentary photography and enabled them to create a body of photographs for online exhibition. As well as learning new practical and critical skills, as a significant part of this project students were asked to reflect on the relationship between these activities and their full-time studies, and the impact this experience has had on them as young doctors. An option module has been developed and there was a public exhibition of photographs and student logbooks in the University of Brighton Foyer Gallery during the Brighton Festival 2007.

Another project investigated **Developing Models of Using Social (Web 2.0) Technologies** for supporting Personal Development Planning and building an environment to augment creativity within group projects. The project evaluated the use of blogs for supporting personal development planning. It exposed the initial difficulties on the part of both students and staff in getting to grips with the technology and proposed strategies to encourage the students to engage with community, including peer assessment, group tutorials and sessions with staff from the Careers Service. The project coordinator gave a presentation to the 2007 Brighton Teaching Conference and is writing a journal article based on this work.

PUGGLAS looked at recycled glass as a material for use in and for the teaching of product design. Two MSc projects were undertaken. One focused on the artistic dimension of glass recycling in creating a number of experimental forms. Another looked at ways of manufacturing construction blocks made of waste cans and glass and prototype testing has been undertaken. Future project work will include the development of a glass processing workshop at the University of Brighton, a glass recycling facility for use by undergraduate students and further MSc. project work. The coordinator gave a presentation to the Centre for Excellence in Teaching and Learning through Design based at University of Brighton in February 2008.

The project **Scaffolding Automotive Engineering Learning** aimed to link the year 3 Motorsport Teaching Course into the Mechanical Engineering Formula Student Car Racing Project. It brought together two cohorts of students from an undergraduate course and a taught postgraduate course. The project involved students building a racing vehicle for participation in an international competitive event. The undergraduate students were exposed to practical problems and issues that helped inform the theoretical underpinning of their course. The Masters students gained a greater in-depth understanding of their own problem solving process through the interaction with the undergraduate students and became aware of the need to explain, and therefore scaffold, their understanding.

Motion in Poetry had as its climax a poetic and visual performance of the Navier-Stokes equations, although it evolved from ideas of how to help students understand these difficult concepts. Engineering students from Sussex were encouraged to get together with their poetic counterparts in creative writing, to talk about the relationship between poetry and equations. An event held in February 2009 included the very first live performance of a 'poetic reading' of the equations led by Creative Writing tutor Kim Lasky in collaboration with engineering professors Peter Childs and Naser Sayma. Members of the 80-strong audience found this immersive experience "mesmerising" and "hypnotic". Four writers, all current or recent DPhil students in Creative Writing, had been inspired by the 'Motion in Poetry' project to write new poems and a poetry reading formed the second half of the afternoon. Staff are now carrying out research into the outcomes of the project, to analyse its effectiveness as an innovative teaching and learning initiative and to inform future creative and collaborative projects.

The experience of the staff who led the CDF Projects

As the final round of CDF projects came to a close, research was carried out via a focus group and a series of interviews to find out what having the funding and being able to carry out their ideas had meant to staff. Throughout the interviews participants referred to their experience in a variety of ways from; a 'space to think', and 'permission to try', to the 'freedom

to fail'. However, all refer to a common phenomenological experience of a 'gap', an 'openness' within which creativity can occur.

It was widely felt that even the relatively small amounts of money (in research terms) within the CDF, were sufficient to give participants the **space and permission to explore**. It gave the licence to carry out work they would have difficulty undertaking under normal circumstances. For some this equated to time with the other course tutors to review and refine content. For others it was a chance to overhaul the entire delivery mechanism. One person said that, "This gave us the space to spend time together analyzing the data, which we would have had to scabble and fight for, to be in the same room at the same time. So maybe it gave us permission in a sense that we were doing a project together not just trying to fight to find another way of doing it..."

Being awarded funding also constituted external 'permission' and 'expectation' and internal 'obligation' to actually do the work. For some it gave a **permission and challenge to succeed**. One felt that, "It gave me a reason for doing it – if I didn't have that I would have done it piecemeal – I had an obligation to do it". Another commented that, "Once you get the money, you are obliged to do it – whereas if it's something I'm supposed to be doing then yeah, yeah I might do it. Also there's authority, as all of a sudden you have an official project – it's not just you."

Many described the **space and opportunity to reflect** that the CDF project funding had provided. One thought that it had given them, "permission to think about what creativity is." Another said that, "It got me thinking about 'What am I really trying to achieve in teaching these students?'. It was to get them proficient and knowledgeable and understanding how these things work... getting them to reflect on their own experiences. It got me to think like a student, it got me thinking 'Why am I a teacher?', 'What should I be trying to achieve?', rather than 'I'll just do some notes, turn up and deliver it and they can digest it in their own way'...It got me thinking about what I should be thinking about". And yet another said that it had been, "really useful, I am now rethinking how I am going to be giving lectures and I do my lectures in a totally different way..."

The **freedom to fail** was another benefit of the CDFs which emerged from the interviews. As society has become ever more risk averse and there is an increasing pressure in higher education for teachers to get larger numbers of learners to attain ever better exam results, there is a tendency to adhere to conservative or traditional teaching methods. The CDFs offered the opportunity to experiment and take risks but for many participants there was no guarantee of success or even partial success, and failure for many in their projects was a distinct possibility which some actually faced. Yet risk is a core attribute of or condition in which creativity takes place and this was recognised by both the staff of the funding CETL as well as by many of those who ran the projects.

One person's heartfelt reflection on the failure of their project put it clearly saying, "Yes, it did fall over, but it made everyone think an awful lot. And it means that if you take the learning of why it went wrong – it's a culture thing, if two cultures meet they have to take time getting to know each other, they haven't got to become each other, but they have got to understand each other and, in this case, one thought the other could just come in and do the work and go away – that's why it didn't work." It was the intention of the CDF to support creative and therefore potentially risky projects. It was also important that if projects did fail, the learning about why they failed and what might be done to mitigate against such failure in future similar endeavours was learnt and captured as reflected above.

For some people the experience of the project provided the learning and confidence to take their ideas forward in further developments. For many it was clearly of great benefit for their personal and professional development in opening up avenues and possibilities which without the funding may have not come to fruition.

What has been learnt from the Creativity Development Fund

It is clear from the CDF projects that, regardless of discipline, the permission to explore, the time to reflect and the freedom to fail are valuable conditions which support the development of innovative teaching and learning.

It is evident from the CDF and Creativity Fellowships, that relatively small amounts of funding can enable a wide range of positive outcomes for both staff and the institutions as a whole. There has been personal professional development for the staff who took part. There has also been a development of academic and research capability within those staff and therefore the participating institutions. New knowledge and understanding about the teaching, learning and creative processes has been gained and disseminated throughout the institutions and the wider HE community and much of this has translated into actual developments and changes within courses in those institutions. The projects have engaged hundreds of staff and over a thousand students through their activities, and the ripple effects are still rolling onwards.

Research in HE has in many disciplines and institutions become prescribed and focussed on attaining high RAE scores or acquiring serious funding. The CDF funding has been a small counter balance to those pressures in encouraging creative and challenging ideas and embracing risk, newness and novelty. It has tapped a rich source of disciplinary and pedagogic interests and passions within staff in the institutions and released it to develop and thrive in creative, diverse and sometimes unexpected ways. Creativity is like the un-prepossessing grit in the oyster which ultimately causes the pearl to exist. The CDF encouraged the grit and maybe institutions would be well served if they too set up similar schemes.

As one person said, we “did leave a trace and we can see the consequences of [what we did] now.”

Chapter 14

The Creativity Fellowships

Paul Martin, Steve Kilgallon, Angela Rogers
and Richard Morris

The Creativity Fellowship Scheme

The idea for the Creativity Fellowship Scheme arose out of the success of the first round of Creativity Development Fund (CDF) projects which had been funded up to £10,000 each by the CETL during its development and building period. The concept was to support creative ideas across a range of disciplines and outside of the creative spaces, to help support and develop a creative community.

Although the Fellowships were smaller than the CDF's, at £1,000 – 2,000 each, our aim was similar, to provide an opportunity for colleagues across the University of Brighton to engage in small, Creativity Centre supported projects. In setting up this scheme the Creativity Centre aimed to support the development of a community of practice from across a wide range of disciplines.

The Fellowships were advertised through the university via its email system so that all staff received it, and was also sent to our FE partner institutions. The main criteria were based around the Centres main aims to support innovations and developments that enhance creativity in learning, creativity in the facilitation of learning, and knowledge and practice of the creative process.

The bid process was kept relatively simple so as to encourage rather than deter applications, and the Centre staff supported the bid writing process by talking to bidders about their ideas and helping them formulate the bids, when required. The bid document was based on that used by the Centre for Learning and Teaching's Fellowship scheme, covering sections including; title; overall aim of the project; intended outcomes; relation to the university's learning and teaching strategy; how it furthers our understanding of learning and teaching practices; proposed design of the project in stages; can it be generalised to other subjects and contexts; proposed dissemination both internally and externally; ethical issues; basic costing.

Many funding streams have heavy monitoring and reporting requirements. We decided that we would have a light touch approach, be available if Fellows needed support, but keep reporting to a minimum to allow the often busy staff as much time to engage with their projects as possible.

Two Fellowship meetings were held during the early stages. The first was a small celebratory launch so that everyone could meet each other, give a brief overview of their proposal and to be sure that they were clear about the funding requirements. The second meeting after about six months was to help to develop the creative community. Everyone gave short presentations of their project, gained feed-back from any issues they had and generally discussed ideas and research issues in creativity.

The scope of the Fellowships

Over twenty bids were received in October 2008 from a broad spectrum of disciplines and of these thirteen were awarded funds. Three fellowships have since withdrawn due to reasons external to the research. The remaining ten fellowships are representative of a wide

range the HE community covering the schools of Environment and Technology, Arts and Communication, Pharmacy and Bio molecular Sciences, Health Professions, Applied Social Sciences, Literature Language and Communication, the Centre for Learning and Teaching (CLT) and the Faculty of Arts and Architecture. The ten Fellowships have fared well, with most having completed their research projects at the time of writing.

The Fellowships and their findings

With joint funding from the Centre for Learning and Teaching, a member of staff has investigated the potential for a **Peer Assisted Learning Scheme (PASS)** to be set up within undergraduate programmes within the university. A pilot scheme was run through a creative writing module. Two 2nd year student volunteers, who had passed the module, were recruited and trained to facilitate small groups of about ten students specifically in giving and receiving verbal feedback. The experiment was evaluated and found to be so successful that three other peer-learning schemes have been set up across the university in a range of disciplines and training sessions for the student volunteers has begun.

From the School of Literature, Language and Communications, two members of staff used their Fellowship funding to further their existing research, supported by the CLT and the CETL in Design, into how Graphic Design, Illustration and Creative Writing student's, are motivated by and draw on inspiration from their **Sources for Creativity**. A series of workshops took place in the Creativity Centre aimed at encouraging students to reflect on their creativity by using a range of tools including collage, creative writing, photography etc. Through self reflective processes their findings suggest that it may be beneficial for Higher Education to link the Personal Development Planning (PDP) agenda and the creativity agenda as a way of making both more relevant to students. The paper linking 'Creative Practice to the Personal Development Agenda' by Reading and Moriarty was published in *Dialogues in art and Design: Promoting and Sharing Excellence* (2009).

A member of staff from the School of Health Professions used her funding to **Encourage Creative Skills in Occupational Therapy** (OT). Pilot workshops were run for practicing Occupational Therapists to experience a range of craft skills which may be of use in their work. Evaluation of the workshops has clearly demonstrated that the skills part of the OT curriculum which includes, Arts, Crafts, poetry, Performing Arts, Horticulture and Cooking is very important. It is not just a fun extra but an opportunity for learners to gain skills to use in their practice. This finding has resulted in course staff putting a focus on enabling students to relate their new craft skills to their practice.

Exploring the **Generation of Creativity in Student's Research Learning Journeys** was the research focus for three staff from the School of Applied Social Science. Their main aim was to identify barriers to and opportunities for developing student creativity in the learning and practice of research skills. They conducted two focus groups with students and carried out interviews with staff. The staff thought that creativity was variously; producing knowledge; bringing together different ideas; a problem solving process and a collaborative process. They felt barriers to creativity included; lack of time and space; the tightening and complexity of research ethics; lack of knowledge; fear and risk and life pressures. Staff thought that students' creativity could be developed through; using staff's own research experiences; finding other ways of engaging students in research teaching; helping students to understand and use the skills they already have; build confidence and reduce fear. Students made a series of suggestions about how creativity may be encouraged including; learning from peers; more real world experience and learning from their teacher's experience. The team will feedback the findings to their colleagues in the School and work towards incorporating ideas into how this area of the curriculum is taught.

A member of staff from the School of Historical and Critical Studies is focussing her research on the creation of a Digital Glossary of Terms. Over several years of teaching she has created a glossary of terms for her students and is using the funding to explore how a series of terms

such as 'psycho geography' or 'abjection' could be presented in a digital format. This would be a digital page including definition; links to recent events such as policy announcements, media events etc. which would give students a trail of information and ideas to follow around the term in question.

Teaching Empathy to Pharmacy Students is the focus of the Fellowship for three staff from the School of Pharmacy and Bio molecular Sciences. Empathy is recognised as essential in delivering effective patient centred care. However, recent studies suggest that pharmacists, who are the most accessible health care providers, have lower empathy scores than GP's and that there is little evidence that this skill is being taught to pharmacy undergraduates. The team, in consultation with a local theatre group, developed and ran workshops in the Creativity Centre to help students develop empathy by getting them into the role or persona of another person. They found that role play was effective for those who took part, as was the 'worst patient in the world' scenario, but that the sessions need to be part of a module to ensure attendance. The team are looking into the possibility of organising 'reflective sets' for pharmacy students to help them talk about difficult patients they have encountered and to help them think of patients as people which at present is not explicitly required.

Two staff used their Fellowship to explore the **Impact of the Creativity Centre and On-line Space for Enhancing Creativity on a Creative Writing Module**. The focus was around the potentially daunting experience of sharing work and ideas and receiving criticism and the potentially positive effect which both physical space within the Creativity Centre and on-line space in the blogosphere may have. Their findings suggest that both elements of the Creativity Centre and the on-line facility enabled students to develop their feedback skills, improve their writing, and develop a sense of community that helped to increase confidence in writing and the feedback process.

A member of staff from the Faculty of Arts and Architecture had recognised the benefits of teaching Graphic Design student's systematic creative thinking techniques. His Fellowship research focussed on a **Practical Exploration of Creative Thinking Systems** to see if his impressions were valid. An extension study course was devised aimed at equipping a diverse range of learners with a toolbox of effective idea generation techniques, combining creative thinking techniques with yogic meditation practices to improve concentration. Sixteen students took part in the programme from nine different courses covering Fine Art and illustration to Digital Music and History of Design. The outcomes were very positive with students finding techniques such as the 'Idea Box' exceptionally useful. The students also found the various visualization techniques useful and the relaxation techniques helpful in relieving stress. The successful elements of the research will be introduced as a one day workshop for MA students and also into other workshops.

A member of staff from the School of Environment & Technology used his **On-Line Reflective Journal Fellowship** to investigate the use of on-line facilities in encouraging reflective practice amongst engineering students. Much of the teaching in engineering courses tends to be lecture based which can encourage rote learning and could limit the creative development in some students. As students appear to learn more when they have more control over their own learning styles and patterns, on-line facilities were introduced to encourage their learning. The research found that students needed a reason to be convinced of the validity of using online techniques. Reflective practice still remains a difficult skill for many students to develop but that this could be encouraged more, if there was more feedback from the tutor. This worked well in small groups, such as project-led modules where the student's experience was further enhanced by the publication of podcasts of the individual meetings in a discussion board that was only accessible by the student and tutor, leading to more meaningful exchanges. The use of podcasts and video-casts of lectures have also led to a different way of working for the student. Students were encouraged to answer their own questions by reviewing the material published. There was now a cycle in which the lecture is first presented, followed by some reflection, and then some testing via online tests and then further reflection via the feedback

from the tests. Interestingly, it appeared that the main motivators for the participation in these activities were twofold – competition between motivated students and the desire to get as many marks as possible. The project was successful in showing a different way forward in encouraging learning amongst students. Students now had more resources available when revising for the final examinations, and were more responsive when given a framework to study. Full details can be found in the paper by Deshinder Singh Gill called ‘Using On-Line Journals in Engineering Courses’ (2009).

Two staff from the Faculty of Arts and Architecture investigated **Theme Clusters and the Process of Design Development in the Making of Successful Creative Practitioners.**

Nearly 250 images collated from the students, have been archived and are being separated out into theme clusters. Fashion and textile students were given a questionnaire to ascertain the ways in which they accumulate visual research, develop concepts and ideas, and apply creative strategies for design outcomes within the disciplines. Key headings of the questionnaire included; Source of research – provoking information gathering and inspiration; Practice based techniques – visualising research information; Technology and CAD – visualising research information; Connection – design development and the ‘Eureka’ moment. The sources to generate inspiration were found to be multi faceted including film, magazines, museums, existing designers, networking with peers, etc. The connecting of the initial research to the development of design ideas also comes in multifaceted forms but the main process through which this is achieved is the exploration of thinking through drawing and rendering of ideas in paper, where the sketchbook features as the journal of that thinking. What does begin to re-occur in the data is that the ‘eureka moment’ is underpinned by two criteria, extensive research and a continuous process of small successes building up a whole. Further analysis of the data is ongoing.

Learning from the Fellowship Scheme

It is clear from the Creativity Fellowships, as with the CDF projects, that regardless of discipline, the permission to explore, the time to reflect and the freedom to fail are valuable conditions which support the development of innovative teaching and learning. From the few fellowship meetings which were held, it has also emerged that there is a need for a forum in which people engaged in pedagogic research, whatever their discipline, can gather to share and develop ideas as a supportive and creative community.

Many of those who applied for fellowship funding were not used to research funding applications or well versed in research methodologies or dissemination techniques such as writing papers etc. Having a simple, non-threatening and supported bid process has meant that the good ideas from less experienced researchers had a chance to develop and be heard. In addition, some Fellows sought advice on appropriate project planning, research techniques or dissemination methods and outlets. This support, which was provided by members of the Creativity Centre team, proved a necessary and helpful addition to the fellows with less research experience and as a process could be seen as an important element in developing research capability both within individuals and the institution.

It is evident from the Creativity Fellowship Scheme that relatively small amounts of funding can enable a wide range of positive outcomes for both staff and the institution as a whole. These range from personal professional development, academic development, research development, team development and pedagogic change to learner support and course development.

Above all, we have found that this scheme, with its supportive process and tolerance of risk has tapped a rich source of disciplinary and pedagogic interests and passions within staff in the institution and released it to develop and thrive in creative, diverse and sometimes unexpected ways.

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Chapter 15

Teachers' conceptions of creativity

Angela Rogers

Creativity is an, 'Imaginative processes with outcomes that are original and of value' (Robinson, 2001:118)

This chapter reviews the findings of research which was an initial exploration of conceptions of creativity in relation to tutors and their discipline, their teaching and their student's learning.

Introduction to the research

The research was undertaken as part of an Economic and Social Research Council research network hosted by City University that looked at creativity in professional practice in conjunction with the University of Brighton Creativity Centre.

Teachers delivering courses that led to professional qualifications were chosen as participants in the research. These included general nursing, mental health nursing, midwifery and pharmacy. In each case the courses were accredited and the curriculum largely determined by the appropriate professional body including the Nursing and Midwifery Council and the Royal Pharmaceutical Society of Great Britain.

The research was based on nine one-to-one interviews. Four interviewees were members of staff from the school of pharmacy, including one psychologist, and the remaining five interviewees were staff from nursing and midwifery, including three staff teaching mental health nurses. There were four men and five women in the group. Respondents ranged from senior lecturers and readers to the assistant heads of both schools. Questions were asked about creative professionals, creative teaching and creative students in the context of the respondent's discipline.

Although the findings from a sample of this size can do little more than raise questions for further research, the common themes which emerged were strongly and coherently voiced and therefore may well be indicative of a much larger group.

Creativity with a small 'c' or big 'C'

'It comes down to what you define as creative. I'm interpreting the idea of being creative as being imaginative and seeking imaginative solutions to problems.' (Pharmacy respondent)

There is a long running debate concerning the definition of creativity. This includes the question as to whether an idea or a product needs social validation to be called creative or whether it is enough for the person who has the idea or produced the product to feel that it is creative. One can immediately see the relevance of this debate to issues of assessment in education, especially on courses leading to professional qualifications. In his seminal work on creativity, Mihayli Csikszentmihalyi (1996) says that he would rather see creativity as a subjective phenomenon, which is personal rather than cultural, but that he can see no viable way of doing this.

'No matter how much we admire the personal insight, the subjective illumination, we cannot tell whether it is a delusion or a creative thought unless we adopt some criterion – of logic, beauty or usefulness – and the moment we do so, we introduce a social or cultural evaluation.' (Csikszentmihalyi, 1996:403)

This led him to develop a systemic approach to creativity that relocates the creative process outside the individual mind. He acknowledges that this goes against the current maxim that everyone has the potential to be creative and argues that he doesn't think this is a very helpful supposition.

In his 1996 study of nationally and internationally recognised creative people, from a range of disciplines, Csikszentmihalyi was concerned with creativity as a process by which a symbolic domain in the culture is changed, such as the creation of new songs, new ideas and new machines. He argues that innovation has to be preceded by mastery, and that individuals or groups must master a domain before they can make any changes to it. For example, one must understand the laws of aerodynamics before they can invent a new aeroplane design. If we accept Csikszentmihalyi's argument, then the tensions in higher education are apparent. How can students be in the process of studying a domain at the same time as challenging it in order to create something new?

A respondent from mental health was emphatic that at the beginning of his professional life he had had to learn and follow the rules, as he gained experience and confidence he was able to put the rules to one side and operate more intuitively. When asked if he thought a lack of experience meant it was difficult to be creative, he answered 'Yes, I would say so'.

'A creative practitioner in mental health is someone who isn't bound by rules, who's transcended the rules, someone who can work in a creative instinctual, low visibility and tacit way. Sometimes you don't always know why you do what you do; you just know it's the right thing to do. A way of developing so you don't need the rules is to use the rules to start with.' (Mental health nursing respondent)

Returning to Csikszentmihalyi, he makes the assumption that everyone has potentially enough psychic energy to lead a creative life, however there are serious hindrances that may make it difficult to realise this potential. These obstacles are:

1. Being exhausted by too many simultaneous demands.
2. Having difficulty in harnessing our energy and activating it in the first place.
3. Being distracted and not being able to protect our energy.
4. Apathy or lacking the discipline to manage our energy.

(Csikszentmihalyi, 1996:344)

Csikszentmihalyi's comments appear to be moving towards an argument that supports specialisation. In his recent book 'Outliers', about men and women who do something out of the ordinary, Malcolm Gladwell (2008) suggests that, apart from factors like parentage, peers and opportunity, it takes 10,000 hours of practice to become outstanding in a field of practice.

It would be foolish for the university sector to have aspirations for all graduates and post-graduates to become outstanding in their field. There are however, attributes of creativity that are very applicable to teaching and learning, which can be encompassed by the notion of 'learning to learn'. These attributes include; being flexible and open-minded, being able to move from detail to the bigger picture, being able to tolerate ambiguity, take risks and learn from failure and being able to respond to new circumstances. The importance of these attributes outside education is summed up in a quote from Sir John Harvey Jones, in Ken Robinson's book, 'Out of Our Minds: Learning to be Creative':

'Every single person in business needs to acquire the ability to change, the self-confidence to learn new things and the capacity for helicopter vision. The idea that we can win with brilliant

scientists and technologists alone is absolute nonsense. It's breadth of vision, the ability to understand all the influences at work, to flex between them and not be frightened of totally different experiences and viewpoints that holds the key.'
(Harvey Jones, cited in Robinson, 2001:193)

With the expansion in the number of young people entering higher education there is a corresponding increase in the demands on teaching staff to manage and respond to growing numbers and needs of a wider range of students. In the case of the disciplines covered in this research, there is also a comprehensive amount of factual and technical knowledge required as a basis for a professional qualification. It would therefore seem advisable for universities to invest in developing students who understand how they learn and who can become independent learners. This presents a challenge for those institutions that are steeped in traditional disciplinary and didactic models of knowledge transfer, especially where individuals actively defend these. As Robinson says, 'our categories of knowledge must at best be provisional.' (Robinson, 2001:199)

Research Findings

For practical reasons, the findings of this research are discussed under the headings, 'creative practitioners', 'creative teaching' and 'creative learners'. These headings approximate to the research questions although, as is to be expected, there were many overlaps and duplications in the raw data.

Creative practitioners

'To be a creative nursing practitioner we have to acknowledge that the act of looking after someone in distress requires something like wisdom as opposed to knowledge; something alive, upgradable, unending and harder to communicate.' (Mental health nursing respondent)

A number of people responded to the question, 'Can you describe a creative practitioner?' as a question about teachers rather than pharmacists, midwives or nurses. In the responses there appeared to be more opportunity for creativity in the nursing and midwifery profession, especially in mental health nursing, than in pharmacy. This may be associated with differing identities; broadly speaking nursing and midwifery are essentially 'caring professions' that deal with people, whereas pharmacists are first and foremost scientists. As one pharmacy respondent said, 'We're not renowned for our creativity in pharmacy'.

Many respondents felt they bridged the professional and teaching role, especially those working in mental health and midwifery, where there were strong correspondences between aspects of what they saw as creative professional practice and creative teaching. One respondent from mental health nursing, spoke about having a moral responsibility to articulate why he did what he did and to link his teaching to that. He spoke about how struck he was by his young students' profound and significant experiences of death and dying. If students are encouraged to think about how their experiences bear on their work as emerging professionals they can look at the impact of being with people who are dying. He felt that a creative way to do this was to help them hold an inner safe space, where they can explore their feelings, where they can discover what helps them remain present and not walk away. He pointed out that this was not a conventional way of teaching about death and dying.

A pharmacist defined creativity in terms of seeking imaginative solutions to problems. When faced with a set of symptoms that weren't responding to the prescribed medication, a creative pharmacist would explore the problem more widely. For example, if the prescription cream is not treating a skin condition then there may be an underlying condition, the patient may be seriously stressed, and this would need a different approach. Or maybe, through a lack of understanding, the cream is being applied and immediately washed off by showering or bathing. Historically, pharmacists have not been required to consider these questions and think about the patient as a whole person in a particular life situation. There is, however, a new

government drive towards more community dispensing which will mean that pharmacists will have to check that patients are using medications correctly and carry out some level of diagnosis. The pharmacists in the interview group argued that their students will have to become more observant, questioning and empathetic with patients, in essence develop attributes of creativity.

Pharmacists are acutely aware that drugs can kill or cure. The professional body errs on the side of safety and requires students to demonstrate tightly assessed skills. Virtually all science dominated curricula demand an extensive amount of base level knowledge. One pharmacy respondent observed that in a four year degree leading to a master's qualification, MPharm, it is difficult to justify much time on the so called 'touchy-feely' aspects without objective evidence of its value.

Creative Teaching

'The trick is thinking of something that supports the message, it's not just about dressing up and making them laugh.' (Pharmacy respondent)

There was a wide range of responses to the question 'What does creative teaching look like?' These included a broad statement about the capacity to draw on any method, example, metaphor or possibility and make that serve the underpinning purpose of teaching. Also to not rely on pre-prepared material, but use different ways to stimulate dialogue and make sure that the groups are safe for students. For some the response was to identify someone who used arts activities and processes in their teaching, for some it was colleagues who took risks within their department and for others it was teachers who modelled and supported imaginative professional practice. The ability to be spontaneous, improvise and think 'outside the box' was mentioned several times but was tempered by comments about the need for teaching strategies to fit the purpose and support the 'message'. One pharmacy respondent emphasised the need for teachers to be efficient and well organised as well as engaging. If creative teaching is no more than entertainment and anecdote it becomes wearisome.

In the same vein as the earlier comments about the need to follow rules before one could be creative or intuitive as a practitioner, another respondent spoke about the role of confidence in creative teaching; confidence that comes from experience. 'When you're new, you feel you have to know everything yourself and have to tell students everything. With more experience you realise it's ok to give students something to read and explore a small amount with them. A midwifery respondent said that there is a skill in teaching which is about being able to let go, not having to hold it all and let students explore things on their own. Another respondent in the same field, spoke about teachers who were worried about letting go, 'How can nurses learn if I'm not teaching them?' and about assessing non-standard work, 'How can I mark this work? If it's a five thousand word essay I know exactly what it's going to look like, these are all different how can I judge the difference between them?' These issues have to be addressed in courses that aspire to produce creative practitioners, because teachers will have to get to grips with the notion of individual constructions of knowledge and begin to value what individual students create.

'It doesn't matter how we dress it up, [such as] giving the module a contemporary name, the people delivering the content tend to go to the filing cabinet and take out the old and tested' (Nursing and midwifery respondent). There were comments that referred to the need for confidence in curriculum innovation. For example, one midwifery respondent believed that an attempt to shift to problem based learning failed for several reasons. These included a lack of courage, students might not like it, a lack of commitment, conventional essay assessment was run alongside the new approaches, and lack of staff preparation, and there was no cohesion amongst the staff in the approaches taken. If teaching staff cannot demonstrate confidence in new approaches how can students be expected to do so. It may well be that in the case above, staff could not free up enough time or emotional energy to make fairly radical changes and follow them through.

For those who mentioned arts processes there was, to a considerable extent, an assumption that the use of drawing, painting, song, dance and poetry etc. was automatically going to make teaching creative. Feedback from students and teachers involved in Creativity Centre projects demonstrates that visual arts processes can play a significant role in learning and teaching. It must be emphasised however that these processes need to be clearly understood and their rationale confidently articulated, in order for them to have a chance of success. One respondent pointed out that the use of a more unusual teaching strategy had to be reasoned through in the same way as a clinical judgement. He gave an example of using creative writing with depressed clients. It was important that the writing was doing more than just making the world feel like a better place for a short period of time and enhancing the professional's ego.

Other respondents spoke about colleagues who took risks in order to provide students with more challenging and 'realistic' experiences. One respondent in mental health nursing spoke about giving people space. He described a colleague who, in a particular module, had left the boundaries scarily unstructured. There was a great deal of friction, students got angry and desperately wanted the teacher to lead. The respondent said he did not think he himself would have the wherewithal to do that. In addition since the nursing school is no longer autonomous and has merged with the university, it has become subject to more stringent health and safety legislation. Since this change, creative and experiential approaches, such as blindfolded students being lead around the premises and using psychodrama to recreate a psychiatric ward, have been dropped.

The university now requires all lectures and presentations to students to be available on Blackboard, the student intranet or virtual learning environment. How might this effect teaching? One pharmacy respondent, whose career choice had been inspired by a good teacher at her university, surveyed her students and found that they really wanted PowerPoint presentations uploaded to Blackboard. They thought that would mean it was not necessary for them to attend every lecture and they seemed to place little value on the live experience of teaching and learning. This may have something to do with the lack of interaction when there are large numbers of students in lectures and seminar groups or the apparent security of having notes instead of engaging in the difficult complexity of learning for oneself.

Creative Learners

'A creative student, if there was space for them to be creative, would be confident, articulate, full of ideas and approaching problems through more creative ways.' (Pharmacy respondent)

The question 'How do you recognise a creative learner?' proved to be the one that gave most respondents pause for thought and it maybe that it is not a useful notion. In general people spoke about academic ability, initiative, confidence and risk taking. There also seemed to be some conflation between the notions of an engaged and potentially rewarding student and a creative learner. As Julian Sefton-Green says, 'We need to think carefully about how or whether we can make claims about creative learning that distinguish it from learning in general.' (Sefton-Green, 2008:24)

One respondent from mental health nursing thought that students had to be listened to and engaged with so that teachers could see how they experienced and understood things. He commented that, 'If they are able to respond to metaphor or articulate emotions, I experience them as creative learners'. Interestingly there was no mention of creative learners being difficult or troublesome although there were examples of students who didn't achieve high marks in written assessments but had success in more 'creative' projects. There is an issue about the value of identifying creative students, as by implication there will be students who are identified as uncreative. This could be detrimental in terms of teachers' attitudes to some students, and, if made known to students, to their sense of themselves as valued learners.

One respondent felt guilty that they made no attempt to identify creative learners and others said that given the number of students they taught at any one time it was almost impossible

to identify individuals. Lectures and seminars with large groups gave little opportunity for students to demonstrate creative attributes. In some cases it was only during the final year projects that staff, were able to get to know individual students other than superficially. A pharmacy respondent observed that, 'One of my final year project students didn't like the essay, measurement methods, I gave her; they were tortuous and long winded. So she went away, read the literature and produced a new method, including synthesising a new substance because what she needed couldn't be bought. That's a creative student.'

Students on professional courses are concerned that they have to achieve certain standards and they worry about not being in control of what they learn. A nursing respondent said that students will ask, 'Is this all I need to do to pass, because if it is, that is all I'll do'. She thought this was to do with anxiety about risk, getting it wrong and causing suffering, as much as the fact that studying at the same time as working in an emotionally challenging environment is exhausting.

The pharmacy respondents in particular, felt there were few opportunities for students to show creative attributes within a curriculum that is risk adverse and dominated by the assessment of skills and knowledge. Although all mental health involves some risk especially around the use of drugs, mental health nursing students are able to test the boundaries of what is acceptable in normative psychiatric nursing practice. For example, a female student on a residential care placement showed empathy to a catatonic woman patient by mirroring her behaviour. The woman just sat on the ground not speaking and the student sat down next to her and stayed silent. This was very risky and challenging for other staff in the institution but was encouraged by the course team.

There were several mentions about the drawbacks of teaching large groups, although from the other extreme too small a seminar group was thought to be exposing. For participatory learning in some areas the ethos of a group is possibly more important than its size. Nursing students who are in work placements that are stressful, often dealing with pain, suffering and death on a regular basis, have to be able to share their experiences in an open and trusting environment. Groups need to be well facilitated and unfortunately teachers do not necessarily have the skills to deal with negative group dynamics. 'Groups don't always meld together, people are often quite judging of each other and organise themselves into little cliques. Sometimes classes aren't safe places as people can be openly disrespectful... it can be quite problematic to express your views. That's where we have to challenge the traditional forms of teaching and get people working together more'. (Nursing and midwifery respondent)

Initiatives to promote creativity in education have a high currency at the moment. It is not clear however, to what extent these are any more than new ways of framing existing learning practices in the arts, as is the case with the 'Creative Partnerships' initiative, or strategies for personal development. These are of course still worthwhile projects and in the case of Creative Partnerships, OFSTED have acknowledged improvements in GCSE exam results through creative learning facilitated by creative practitioners from the arts (Creative Partnerships, 2010). There remains the question of quality, highlighted here by teachers concerns about assessment. As Sefton-Green points out, 'There are examples of good and bad arts learning, transformative and conservative ways to make creative people and probably standardised ways of doing creative thinking!' (Sefton-Green, 2008:24). Teaching is a combination of pragmatism and aspiration, there will always be a gap between the espousal of aims and what can be achieved on a day to day basis. Rather than think about creative learning as a particular set of identifiable behaviours or cognitive processes, it may be most useful to think of it as the bridge between pedagogy and learning (Cochrane, Craft and Jeffrey, 2008:30). This would value equally the experience of students and teachers and prioritise the quality of their collaboration in the learning endeavour.

Conclusions

- The notion that creativity is limited to and a prerogative of the arts still prevails and appears to constrain notions of creativity in other disciplines.

- In a higher education context, conceptions of creativity that focus on learning may be more useful than those that are discipline specific.
- Teachers conflate creativity with initiative, enthusiasm, engagement, confidence and academic ability. This suggests that creativity in learning and teaching is currently too ambiguous a concept to be generally useful.
- The drive for more creative professionals is pushing higher education institutions to become more innovative in their teaching; this appears to be in conflict with the demands of professionally accredited curricula dominated by skills and knowledge.
- The demand for more creative professionals, and therefore more creative graduates, is likely to have implications for new learning spaces that support the development of generic creative attributes.
- Relationship appears to be a significant feature of creative learning, both between learner and teacher and between learners themselves.
- Teachers may well need to acquire effective group facilitation skills to support teaching methods that encourage independent learning.
- Large size student groups and traditional learning spaces that limit interaction militate against building trust and intimacy.
- The constraints of timetabling, large student groups, inadequate assessment strategies, knowledge and skills dominated curricula and health and safety are seen as constraints to creative teaching and learning.

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Section V

Findings and reflections

The first three chapters in this final section are summaries of the findings drawn from this book, in relation to the design and use of creative learning spaces. They focus on the varying issues for different groups; those who design spaces, including builders and estates departments; those who manage spaces including education leaders and management, and those who teach in spaces including facilitators and tutors.

The final chapter comments on some of the main ideas presented in the book and raises key challenges facing educators in a complex HE sector with conflicted purposes; including how to cultivate humanity, introduce learner centred approaches to teaching and learning and support creativity in conformist educational institutions and disciplines.

Chapter 16

Summary of findings for designers, architects, estates departments, builders and other specialist suppliers

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

The findings in this section are distillations of learning from our experience of working with academia and industry in the Creativity Centre and with the CDF and Creative Fellowships in the wider education community. Whilst these observations are particularly intended for designers and creators of learning spaces, you may also find some of the findings in the other summary chapters useful.

General Observations

- Develop a vision based on the intended uses of the space
- Take time for and encourage all the participants in the process to develop a common understanding of the vision
- Don't lose sight of the vision
- Learner centred inquiry needs to be at the heart of the design of new learning spaces.
- No one size fits all – learners and tutors have had different needs and disciplines have different traditions and concepts of knowledge and creativity.
- The design team should include educationalists, psychologists, students, interior designers, academics as well as building professionals to encompass a diversity of views and expertise.
- Pedagogic rationale and best learning and teaching practice should be driving the features of specific learning spaces and it is therefore incumbent on designers to conduct their own groundwork to establish key objectives, needs and requirements.
- All design features whether space, technology, furniture, flooring or fittings need to be considered in relation to both the education philosophy underpinning the project and the types of learning which they aim to support and encourage.

- Traditional outcomes and project management approaches should not just be assumed as effective. Learning spaces may need more research, specific to the needs of learning.
- If Learning and teaching approaches are changing and need more flexible spaces, then plans for new buildings must include new types of space.
- Knowing where to start can be difficult although there is a trend that seeks to categorise the purpose of a learning space – teaching, open access or social learning for example – and this might be a helpful place to start.
- The design and development of learning spaces needs to be an iterative process.
- Pursue the idea of a slowly evolving environment, through an organic process in which the users decide what they want, and build the technology up gradually.
- It is useful to prioritise the features of the space so that less important elements can be sacrificed if necessary.
- An enhanced and flexible learning space in itself does not automatically bring forth the desired creative, learning or teaching outcomes.
- To facilitate a wide variety of learner centred teaching approaches, non-specialist learning spaces have to be able to offer more informality, openness and flexibility.
- In order to encourage and enable staff to use a wide variety of learner centred teaching approaches on a regular basis, there needs to be enough flexible learning and teaching spaces across the campus.

Observations arising from the Creativity Centre design

- The most important element in the Creativity Centre in terms of supporting student centred learning and creativity has been its flexibility.
- The flexible space has enabled many staff to teach in their preferred style i.e. in a student centred way, and use methods that are more difficult in standard classrooms or lecture hall layouts.
- The flexible space has enabled staff to experiment with unfamiliar teaching strategies for the first time and given them the confidence to adapt these to use in more conventional spaces,
- The key physical features of the centre in terms of flexibility have been the lightweight furniture (chairs, bean bags, folding tables), the easily moveable write-on wall panels and having more than one projector.
- The short throw ceiling mounted projectors in the Brighton Creativity Centre, were quite close to the display/screen areas and give good definition. At Sussex the projectors were mounted more centrally in the room giving larger image areas for mood creation but also giving tutors the problem of looking into the light sources and casting shadows on the displays.
- Projection screens and surfaces at Brighton are in a relatively enclosed area, providing a high contrast image whilst allowing students to sit in a brighter, windowed area. At Sussex, the displays were less enclosed and in order to avoid wash out needed blinds drawing. Both learning spaces suffered problems projecting onto white board areas, with issues around split lines and bright spots.
- Both sites struggled to make the multi-media sound systems work effectively. Despite trying uni-directional speakers and sound zones, to avoid sound bleeding across areas, using one sound system at a time seems to be the only practical solution.

- The carpet tile flooring in the Creativity Centre has provided a cosy feel to the space and minimised echoes. The linoleum floor at Sussex gave a greater option for messier activity but did however provide a harder, more reflective floor that bounced sound and was less conducive to open discussion.
- The Centres moveable walls and easily moveable furniture and range of furniture enabled easy flexibility in changes of room layout thus enabling a more proactive and intuitive use of the space.
- The technology has proved less intuitive requiring users to take time to learn and practice the controls. This is particularly true of the technology at Sussex which is based on bespoke system design. Even access to computers required some knowledge of switching and wireless interactivity providing a challenging level of complexity to most users.
- Make the technology as simple as possible. Then make it simpler.
- Think differently. Some of the design solutions generated can lead to design and cognitive challenges. Floor layouts for group learning spaces for example should be big enough to accommodate groups of students seated cabaret style, up to the maximum number of students likely in a cohort. There should be cabling to allow power support to each table without trailing leads and there should generally be provision for people to move about between these tables. There may also need to be props and equipment in these areas with their own storage requirements. The result can require a lot of space and justifying this requires prioritisation of space effectiveness rather than traditional thinking on space utilisation. Similarly, environmental control should be in the hands of room users to suit room conditions and session needs which may be equally contrary to notions and guidelines on air conditioning and sustainability.
- Beware choosing the easy options. Would you turn down architectural impressiveness in favour of a neutral space? Would you be able to say no to technology and install simple whiteboard space instead? Would you install lightweight furniture which enables greater flexibility of layout and use when your systems suggest that the standard weight offering from your suppliers last longer?
- Achieving the vision of a learning space is not without its difficulties. Academics can – and inevitably will – have disagreements over requirements and it is advisable to have these debated and resolved well in advance of the design and build phase where hold ups become expensive.
- Designs like the Creativity Centre might not be as efficient as block work walls with surface mounted conduit to construct, but it may have the capacity to be far more effective and versatile in its support for learning.
- Learning spaces such as the Creativity Centre may be different to every other space in an establishment. The space should therefore be embedded within a system that allows it to be used effectively. It could have name rather than a number so that learners acknowledge it as a special place. It needs to be regularly bookable so that tutors will engage with it. Tutors may need help in understanding that it is possible to adapt the room specifically for every different lecture, or make changes even during a lecture.
- What sort of doors or entrance should it have and what signals might that send to users.
- Don't lose sight of the vision in practicalities

Chapter 17

Summary of findings for academic leaders, managers and administrators

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

The findings in this section are distillations of learning from our experience of working with academia and industry in the Creativity Centre and with the CDF and Creative Fellowships in the wider community. Whilst these observations are particularly intended for academic leaders, managers and administrators, you may also find some of the findings in the other summary chapters useful.

- Develop a vision based on the intended use of the space
- Don't lose sight of the vision
- Be involved at all stages of the project to ensure that the vision is maintained and what is delivered meets the learner needs and is not led by building efficiencies.
- The nature of learning as personal and collaborative inquiry and individual and group meaning making should be placed at the centre of any process for creativity in teaching and learning.
- Learner centred inquiry needs to be at the heart of the design of new learning spaces.
- To facilitate a wide variety of learner centred teaching approaches, learning spaces have to be able to offer more informality, openness and flexibility. This can be achieved through easily moveable and stackable furniture, soft furnishings, room dividers, large areas of wall space with write-on surfaces and mood enhancing features such as sound, lighting and props.
- The encouragement and support of educational and technical staff has been important in giving users confidence to take risks and experiment with new teaching and learning strategies. This is especially so in any prevailing negative discipline or institutional cultures.
- Staff are likely to need encouragement and support in developing and applying learner centred approaches, especially in disciplines and institutions where teacher centred traditions are embedded.

- If creativity in learning and teaching is to thrive in education institutions, there needs to be active institutional support and tolerance of experimentation and risk taking by staff and students.
- It is clear from the Fellowships and CDF projects that, regardless of discipline, the permission to explore, the time to reflect and the freedom to fail are valuable conditions which support the development of innovative teaching and learning.
- It is evident from the CDF and Creativity Fellowships, that relatively small amounts of funding can enable a wide range of positive outcomes for both staff and the institutions as a whole including; professional development ; development of academic and research capability; the creation of knowledge and understanding about the teaching, learning and creative processes; the development of teaching skills.
- Institutions need to accept that staff may require additional time for planning and reviewing in order for new approaches to be tried, refined and embedded in practice.
- No one size fits all – learners and tutors have had different needs and disciplines have different traditions and concepts of knowledge and creativity.
- An enhanced and flexible learning space in itself does not automatically bring forth student centred or creative learning and teaching approaches.
- If spaces have a technological focus their continued existence beyond any initial funding will depend on continued technical support for their use and updating and replacement of equipment and software
- The culture of institutions and subject disciplines, class sizes, traditions and resource constraints are among the reasons why many tutors adhere to more traditional didactic methods of teaching. Technology makes information availability so much easier than before whilst time and life pressures mean students are less committed to 9 to 5 learning. Creativity and learner centred approaches to teaching can support engagement from both students and tutors generating the type of learning culture needed in university and the rest of life in a dynamically changing world.
- Creativity is not all about art, the creative process is just as important for all other disciplines. Whilst we saw many tutors using visual and art based approaches to teaching, science based tutors too developed their own, innovative approaches to teaching and learning, in idea generation, assessment, information delivery and conceptualisation.
- Is there a best approach to creativity in education? In the Centre every activity seemed different. The commonality was variety, experimentation and risk.
- Can we be creative in our classrooms and lecture theatres? Of course, but our project demonstrates just how effective flexible learning spaces that support creative approaches to teaching and learning can be in comparison with traditional classrooms.
- Flexible learning spaces are not necessarily expensive to create. Some of the features of our space are easy to replicate on a low budget such as vinyl write on wall coverings, moveable and lightweight chairs and tables and twin projectors.
- Our experience suggests that technology has an important role, but should not be installed for its own sake. Designers need to be clear as to the intended uses of technologies in supporting learning, for example, the support, enriching or speeding-up of information delivery, to encourage communication and dialogue, or to enable research.

- If students become inquisitive, independent learners, then even the nooks and crannies of buildings, the quiet spaces, places to eat and talk, must be considered as a part of a wider learning environment. Your campus may need redefining.

Chapter 18

Summary of findings for teachers, tutors and facilitators

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

The findings in this section are distillations of learning from our experience of working with academia and industry in the Creativity Centre and with the CDF and Creative Fellowships in the wider community. Whilst these observations are particularly intended for academics and teachers in HE you may also find some of the findings in the other summary chapters useful.

- Through a combination of the physical space and facilities provided, the licence to be creative and the challenges offered by the Centre team, the Creativity Centre has become a catalyst for change.
- The title 'Creativity Centre' has been important in establishing specialness and a licence to experiment and be creative.
- The Creativity Centre has given teachers the chance to put pedagogic theory into practice and refine it.
- The encouragement and support of educational and technical staff has been important in giving users confidence to take risks and experiment with new teaching and learning strategies. This is especially so in any prevailing negative discipline or institutional cultures.
- The most important element in the Creativity Centre, in terms of supporting student centred learning and creativity, has been its flexibility.
- The flexible space has enabled many staff to teach in their preferred style i.e. in a student centred way, and use methods that are more difficult in standard classrooms or lecture hall layouts.
- The flexible space has enabled staff to experiment with unfamiliar teaching strategies for the first time and given them the confidence to adapt these to use in more conventional spaces.
- The key physical features of the centre in terms of flexibility have been the lightweight furniture (chairs, bean bags, folding tables), the easily moveable write-on wall panels and having more than one projector.
- In order to encourage and enable staff to use a wide variety of learner centred teaching approaches on a regular basis, there needs to be enough flexible learning and teaching spaces across the campus.

- In order to benefit from the potential of the complex and technology enriched Centre users needed planning time with centre staff to experiment with the new technology and explore the opportunities of the flexible learning space.
- No one size fits all – learners and tutors have had different needs and disciplines have different traditions and concepts of knowledge and creativity.
- An enhanced and flexible learning space in itself does not automatically bring forth student centred or creative learning and teaching approaches.
- Ultimately the learning and creative outcomes attained in the centre have been determined by the philosophy of the teacher/facilitator and the attitudes and levels of engagement of the learner/participants.
- Curved walls, atriums, big plasma screens, wifi. all looks great, and will be well received – but are they effective in supporting learning? Will they provide clearer, faster, more accessible information, discussion and reflection capabilities, student engagement and application? What exactly are your needs? The form of your learning space should be dictated by its pedagogic need and educational function.
- The design of the Creativity Centre spaces has made them ideally suited to the creation of ideas, group work and workshops, but critically are not considered an easy space for students to gain open access.
- At Brighton, the majority of the Centres over 600 session leaders, adopted techniques following social constructivist learning methodologies such as inquiry based, learner centred approaches. Typically tutors explored issues such as learner physicality and learning engagement and cognition. Why is it incumbent to sit down in order to learn and why can't learners be relaxed and comfortable? Why should learners listen rather than discuss, challenge and explore? Such philosophies raise issues around the roles of students as information receivers or information generators, as isolated individuals or integrated socialisers? Why shouldn't they learn to set times or learn at any particular time and whether the learning environment is a classroom or life itself? Learner centred methods are being increasingly viewed as 'visions of the future' in education, where the tutor role is redefined in terms of reduced delivery and in favour of facilitator and co-ordinator, for example pulling together issues and resources in a more integrated approach perhaps using learning cafes and clusters rather than lecture theatres.
- The process of change, creation and re-creation is the natural order of the universe. If, as educators, we do not help people engage with and contribute to personal and social creation and development, what is the point?

Chapter 19

Giving birth to a dancing star

Paul Martin, Richard Morris,
Angela Rogers and Steve Kilgallon

This book has been the story of the experiences and learning of those who have worked in and with the Creativity Centre over the last three years. For us it was a lived experience in which we were going into the unknown, trying to create new meanings and forms from the chaos of potential afforded by the creative space and its attendant funding. But the book is history! Remember David Bohm's entreaty that "...it is up to each person to make the first step for himself, without following another or setting up another as his authority for the definition of what creativity is and for advice on how it is to be obtained" (Bohm 1998). Creativity is about exploring and unfolding new meanings so although this chapter is attempting to review the main findings and arguments of this book and give pointers to future possibilities – be warned that the real creativity lies within you and what you do next.

We hope that this book has been a journey for you. We hope that we have brought you some new ideas and maybe some challenges to your practice. For some, it may be a comforting thought that you are not alone in your creative approaches to learning and teaching.

Learning, teaching and creativity

When we set out on our 'creative project' we had not really unpicked the complexity of the relationships between learning, teaching and creativity. It is assumed that creativity in learning and teaching is a 'good thing'. We took our challenge as encouraging exploration of the use of creativity to support the development of learner centred learning and teaching practice both within our flexible, technologically enhanced space and within the wider education community.

This has meant that Centre staff have actively challenged and supported both teachers and students in taking risks and exploring the learning possibilities within the Centre. For the Centre staff and the teachers alike this meant considerable time in planning sessions and trying out scenarios, but the results in most cases have been extremely positive in actively engaging learners in their own learning process. Whilst the flexible space and technology have been important in supporting experiments in learner centred processes, we found that it was the underlying education philosophy of the teacher which was the most powerful arbiter of engagement with an experimental teaching practice.

Technology and the future of education

As the star ship 'Enterprise' set out to explore the unknown in space, its crew, like the team of the Creativity Centre had a powerful array of cutting edge technology to support their endeavours. Like those famous fictional explorers, we too have found that although the technology has been useful, it has been the creative and innovative approaches to the challenges met on the journey which have most influenced the learning and creative outcomes.

For educators there are many issues to consider in the development and use of ICT. Technology is often seen by many as a 'Holy Grail' of education, and whilst it is certainly a useful and powerful tool in the armoury of learning and teaching, it is only a tool and not an end in itself. Loveless (2003, 7) says that a helpful way of thinking about ICT tools is to consider how they support learning. She identifies clusters of; purposeful activity; knowledge building; distributed cognition; community building and engagement. These can help us to make choices about the use of technologies in relation to the educational purpose.

UNESCO on their website 'ICT in Education' say that they are giving a high priority in the use of ICT for more pluralistic development in education. They raise a series of ethical and practical questions about its potential uses including; How can ICT be used to accelerate progress towards education for all and throughout life; How can it bring about a better balance between equity and excellence in education; How can it help to reconcile universality and local specificity of knowledge and how can education prepare individuals and society to benefit from ICT that increasingly permeates all realms of life?

Some may think that technology will, eventually, replace teachers. Students in HE are increasingly comfortable with using the world wide web and it is certainly a great source for information and communication. Universities are putting course content on-line for free access yet, in effect, this is no different from open access libraries. It still does not mean that people know how to learn from the resource, how to structure bodies of knowledge, understand the relevance of material or make judgements on its validity. Whereas libraries and institutions may have vetted the quality of stored material there is no such watchdog for the web. Equally, on-line papers, books, articles and blogs are information and data and not learning materials designed to help the learner navigate the field and construct meaningful knowledge. ICT is no quick or cheap fix for education. It does however offer a potentially huge opportunity to be explored, used and developed as a resource for learning, but needs to be engaged with and underpinned by a conscious philosophy of learning and teaching for it to become an effective tool.

Spaces to be creative in

In chapter 4, we discussed the different perceptions of creative spaces as comprising 'physical space', 'virtual space', 'personal psychological space' and 'biological space'. The book has argued that all these 'spaces' may impact on the individual's ability to learn or be creative. Although the Creativity Centre is mostly seen by its users as a 'physical space', all the other 'spaces' come into play when people engage in the teaching/learning process. Therefore to engage students fully in their own learning process, the effects of all of these 'spaces' may need to be acknowledged and addressed by the teacher or facilitator.

On a practical level, institutions need to create more flexible learning spaces to enable teachers and students to engage in more active and learner centred approaches to learning. The standard lecture theatre and classroom layout and furniture set up a didactic expectation and make it physically difficult for teaching staff to engage with learners in anything other than a knowledge transmission mode. Our research showed that easily moveable, light weight furniture, large write-on-able surfaces and simple projection systems were the key factors in enabling more learner centred workshop approaches to teaching. These are not expensive alternatives but require teachers, disciplines, managers and estates to re-conceptualise their ideas of learning spaces away from ones based on traditional transmission models of learning to ones that engage students actively in their learning process.

Permission to be creative

As we have seen in various chapters, the permission to be creative can be a major factor in enabling both teachers and learners to engage with this process. For teachers a mixture of influences including, disciplinary traditions, faculty or institutional cultures, curriculum design, pressures to deliver the 'knowledge', assessment practices, workloads and physical restrictions of traditional classrooms and lecture theatres in conjunction with approaches to

staffing and space efficiencies, can all conspire to enforce didactic methods of teaching and dissuade learner centred approaches or any attempts at creativity.

For students too, many of the above effects can apply in restricting how they see themselves and act as learners. These may also include a wish to be told the information with which to pass their exams and wanting value for money in a consumerised culture. In what Jarvis (1992) refers to as the 'having' state of being a person in society, education can be seen as a simple commodity which in return for time and money gives the holder of the qualification access to a professional elite in what Freire (1978) saw as the 'banking' system of education. However, acquiring knowledge in the 'having' mode does not necessarily change the person or their understanding of the world and their relation to it, for it is not their own internalised knowledge. This is not education.

In the more transformative vision of learning as a process of 'becoming', the student is not just a passive vessel to be filled with what is known, but an active inquirer seeking to make new meaning. For teachers involved in this active creative process of enabling and encouraging learning in others, the rewards of seeing students take charge of their own learning process can be great. However, it becomes crucial that there is a supportive HE culture in order to give both staff and students effective permission to be creative, to risk failure in order to learn and develop and create new meanings.

The future of creativity in Higher Education

At the time of writing, the world financial crisis has forced governments across the world, including that of the UK, to cut their budgets, with education like other social services in the direct line of fire. Whilst education has obviously to bear its share of the cuts, there is a potential danger that support for the time and space in which to be creative and help develop independent learners could be lost in a drive for apparent efficiency through the continued focus on didactic teaching methods. Simon Jenkins writing in the Guardian (2010-03-26. 41) speaks of the damage to HE, continuing from Baker's 1986 white paper which called for it to be brought 'closer to the world of business, in line with the economy's needs' and finding the ultimate expression of this in the re-location of responsibility for universities into the government's 'business, innovation and skills' department. Jenkins sees the consequences for HE as the loss of its core 'soul' in the death of the 'concept of the free-spirited scholar academic'.

This theme is reflected in an article published in the same paper but from 'The New York Review of Books' March 2010. In his article, Grafton states that 'British universities face a crisis of the mind and spirit' (Grafton, 2010, 4). He reflects on the erosion of the 'slow food' feel of British academic life based on a 'consensus that people should take time to make an article... as dense and rich as it could be'. This he sees as replaced by a 'high production' culture of research focussed on gaining further funding rather than knowledge as an end in itself, and in a context where administrators, far from resisting government pressures, often try to show 'that they can do more with less'.

The danger for the adoption of more creative approaches to learning and teaching in HE, as demonstrated by this book, is palpable. It must be remembered that creativity in its-self is not neutral, not necessarily a good or bad thing. It has no morality of its own and can be harnessed for beneficial or destructive uses. As educators, teachers and academic leaders, it is our responsibility to confront these moral issues in our choices and actions. What we do is not morally neutral and affects the development of our culture. We therefore should be aware of our philosophy and of the nature of the contribution we make to HE through the choices we make in our practice.

In conclusion

As changes in the social and technological world become ever faster and more complex then knowledge, skills and understanding quickly become redundant. We face what Toffler (1970) called the increasingly 'rapid obsolescence of knowledge' and the potential 'catastrophe of human obsolescence'.

If, as educators, we see our mission to develop learners who can navigate, survive and thrive in our rapidly changing and complex world, and help to 'cultivate humanity' (Nussbaum 1997), then as Knowles (1980, 41) asserts, " It is no longer functional to define education as a process of transmitting what is known; it must now be defined as a lifelong process of enquiry". Therefore educators need to help learners acquire the skills of 'learning how to learn' and of 'self directed enquiry'. It is that re-creative process of learning and making new meaning which needs to be at the heart of all education practice.

Finally, the title of this chapter comes from one of Nietzsche's most famous insights that you have to have 'chaos in your soul in order to give birth to a dancing star'.

So let your creativity flourish and go and give birth to your own dancing star.

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Echoes from our experience

Quitting the stage

There is a real skill and artistry in collating knowledge into concise and accessible information, so giving a stand up lecture to a large audience can feel very rewarding. Like an actor leaving the stage after a rehearsing and delivering a successful soliloquy.

Changing that mode of delivery can be challenging, time consuming and at times nerve wracking. There are distinct advantages though. Being creative in the way material is delivered can be a liberating experience, for example, and I particularly enjoyed the atmosphere as it changed from a listening to a more dynamic learning culture. Moreover I now feel I've given something of 'me' in the delivery, something of my character and something about 'how' and 'why' to learn not just 'what' to learn. I have shared the learning journey with the students in a way that does not normally transfer in stand and deliver lectures and this is a far more profound feeling of satisfaction.

Richard Morris

At first the idea of being able to change the light colour and feed different scents into the air seemed exciting – as did the range of different projection capabilities. Interesting how soon we realised that the flexible space, easily moved chairs and tables and walls you could move and write on were far more important to help us learn collaboratively.

Anon

Seeking Creativity

They seek it here, they seek it there
Those educationalists seek it everywhere!
Born from endeavour? Or given by divinity?
That dammed elusive Creativity?

Steve Kilgallon

It was useful having a large main working space and smaller spaces for breakaway groups – all with lots of write-on walls and no problems about moving furniture around as our group sizes changed.

Anon

I can smell the lavender

During one of the creativity days I took a group of people through a gentle relaxation then when they were quiet and their breathing had become gentle I asked them to take an imaginary walk through mountains in the south of France. We walked along a gentle path on a hot day eventually coming to a small valley full of lavender fields. We eventually cooled ourselves with some spring water and relaxed in the shade of a Romanesque church.

As the sleepy group gradually surfaced from their relaxation and visualization one person said to me 'I smelt the lavender' and proceeded to say that we had pumped lavender scent out of our Olfactory system. I assured them we had not. 'but, I smelt it, it was really strong', she said.

It is a small demonstration of the power of our imagination if we only give it a chance.

Paul Martin

Well – the walls moved for me! There's something about walls that move and create different spaces that makes you question your assumptions.

Anon

It was dark, freezing cold and there was sleet settling on the windows. I'd got lost on the way to the Creativity Centre and nearly decided not to go. But when I arrived I was given a coffee and a chocolate biscuit, and twig and some ink to draw with. Suddenly it was an hour later and I'd remembered that drawing is all about mark making and that we all see things differently.

I haven't drawn on walls since I was a kid – it's so liberating! It feels slightly naughty!

Viv Martin

It's good to sometimes look at the world from a different eye level. Sitting on bean bags took us back to our childhood – and then back to our real age when we couldn't get up!

Anon

We did a seminar on artist's Open Studios and how the idea spread in Brighton and other places. It was great to be able to show images continuously, use other walls for text and have good discussion space where we could easily move the furniture around. I'd be more ambitious and include more activities another time, now that I can see the possibilities.

Viv Martin

Sometimes the room felt like a Tardis – It had little spaces opening off it and seemed much bigger than it was when I first went in.

Anon

I thought it was a mistake to put the Centre right at the top and back of the building – I thought no-one would ever find it. Now I've realised that it works to take us away from day-to-day routines and helps to see things at a distance.

Viv Martin

It all looked a bit too smart and 'corporate' to start with – I was glad when it became a bit more 'used' looking and it felt as though it was OK to make a bit of a mess.

Anon

One day there was a painting there that took me to the Mediterranean, to sunlight and warmth, to hot colours and the ambivalence of not quite being sure what I could see.

Anon

The chocolate cup cakes were unforgettable!

Anon

Isn't it funny how quickly our thinking can move from having fun and playing to realising how important the implications are for how we try to help students learn!

Anon

We have never yet seen a suit on a bean bag

The Creativity Centre Team

Mithras House
Lewes Road
Brighton
BN2 4AT

www.brighton.ac.uk/creativity



University of Brighton