THE APPLICATION OF CREATIVE THINKING METHODOLOGIES TO POST GRADUATE ENTREPRENEURSHIP EDUCATION

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Introduction

In this project we are undertaking strategic analysis of current practice in the Visual Communication Design program, acknowledged as successful model for engaging students in the methodology of ideas generation, in order to demonstrate how creative thinking can be taught in a range of other disciplines where creativity might be expected, but may not be effectively taught, by a process of modeling a creativity teaching pedagogy in a non-threatening, non-competitive collaborative environment, and determine a way this can be measured and evaluated.

The importance of creativity at all levels of education and in other areas of society, business, etc

National and international bodies in business, politics and education have emphasized the need for creativity in a wide variety of areas where it is not taught, recognizing the importance of innovative and creative thinking in most human endeavors.

The Robinson Report in the UK ‘All Our Future: Creativity, Culture and Education’ (Robinson, 1998) argues that the future success for all organizations now lies in new approaches to developing the creative talents of employees is beginning to have a significant impact in the way future curricula are being shaped to be more inclusive and relevant in terms of creative applications.

‘Businesses everywhere have to compete in a world that’s changing faster than ever. To keep pace they need people who can consistently generate new ideas and adapt to constant change. Many companies say it’s getting harder to find these people. One of the major reasons is education. All over the world, formal education systematically suppresses creative thinking and flexibility. National strategies to raise standards in education are making matters worse because they’re rooted in an old model of economic development and a narrow view of intelligence. For economic, cultural, and political reasons, creativity should be promoted systematically at all levels of education, alongside literacy and numeracy’. (Robinson, ibid)

The Australian Prime Minister’s Science, Engineering and Innovation Council (PMSEIC) working group has identified the importance of Creativity as a prerequisite for economic growth – ‘the knowledge economy is rapidly being eclipsed by the creative economy’. It mentions the role of hypothesis and experimentation as pivotal in the creation of new knowledge and how the sciences and the arts need to come together to model this behaviour in our students not only in the tertiary sector but in all aspects of education. (DEST, 2006)

The South Australian Government Strategic Plan has identified the need for education to enhance creativity and innovation in increasing the connections between education and industry i.e. creative knowledge application. (Tryens, 1997)

Not only does business and the economy require creativity, individuals and society...
require it for their own well being. ‘Creativity is the central source of meaning in our lives . . . most of the things that are interesting important and human are the results of creativity . . . [and] when we are involved in it we feel that we are living more fully than during the rest of life’ (Czikszentmihalyi, 1999)

There is an expressed expectation for applying knowledge in a creative, innovative or original way in documents from courses, programs, university mission statements, governments, industry, etc.

This is particularly relevant in a university environment like ours which promotes education that ‘makes a difference’, ‘is an innovative . . . . institution’ and proclaims its ability to ‘create, apply and communicate knowledge . . . through action that is intelligent in its use of new and emerging technologies’. However what are we doing to actively promote these and the creative inference in their message?

This is equally true of other universities as Erica McWilliam (2007) notes ‘a recent analysis of the occurrence of the word “creativity” within higher education policy documents, such as graduate attributes, indicates that 75% of all Australian universities have an expressed commitment to ‘creative’ learning outcomes.

For example the University of Western Sydney in its missions goals and values states that it ‘aspire to be a place that brings . . . . a source of creativity and new knowledge’ and the University of Adelaide states in its mission statement that its values include ‘innovation, creativity and breadth of vision’

McWilliam (ibid) also notes that ‘a concise definition of creativity within policy documentation is conspicuously absent’ and the results of our research confirm this. Also absent are strategies or models for the teaching of creativity even though aspects of course outlines and set tasks expect a creative result and the majority of assessment is based on a creative outcome.

Our research aims to establish that this is an important role for education and the aim of our project is to provide experiences for students that introduce the concepts, skills and methods that will facilitate this imaginative component of human intelligence. (Gardener, 1999)

This imaginative process is generally lacking in university curricula which are focused on knowledge acquisition and experience that is predominantly predetermined. We propose an alternative process that can provide the catalyst to allow knowledge to be applied in new and innovative ways. (Robinson, ibid)

How and why this expressed expectation is not being met. Course outlines, lecturer’s statements, staff and student responses, limiting expectations of government and university regulations and overcomplaining with these regulations

University programs are structured around achieving certain graduate qualities, For example, graduate quality categories such as ‘Bodies of Knowledge’ usually predominate the curriculum requirements of disciplines other than design or the arts, reinforcing traditional education methodologies and practice based on knowledge acquisition and retention.
McWilliam (ibid) note that ‘a concise definition of creativity within policy documentation is conspicuously absent’ and the results of our research in the examination of course outlines in the trial programs and courses confirm this. Also absent are strategies or models for the teaching of creativity even though aspects of course outlines and set tasks expect a creative result and the majority of assessment is based on a creative outcome. Student feedback from the trials corroborates this omission and teaching staff are also aware that this creative aspect needs to employ effective strategies be taught in a more meaningful way.

Because of this, applying knowledge other than in traditional ways that are seen to be ‘tried and tested’ is uncommon. Debono (1990) states that ‘Education is based on the safe assumption that one only has to go on collecting more and more information for it to sort itself into useful ideas’.

Emphasis in education has been mostly concerned with what Debono (ibid) calls vertical thinking, the process of proving and developing concept patterns whereas lateral or creative thinking sets out to restructure such patterns and provoke new ones. ‘Rightness versus Richness’. Therefore, if we expect the specialist knowledge of a discipline to be creatively or innovatively applied, we need flexibility and adaptability to prevail over traditional formularized approaches focused only on what Postman and Weingartner (1969) refer to as the ‘information dissemination business’ that teachers do well. While these traditional ways of teaching are often acknowledged as destined to obsolescence (eg Robinson, ibid) at times they seem so ingrained in our culture and education as to make them a constant impediment to our need to apply creativity. This is especially so in discipline areas outside of design and the arts. These are the areas that traditionally do not include creativity which we have established need it most for our future individual and collective wellbeing.

‘If as is still broadly the case, creativity continues to be regarded as a “rare and exotic mental ability that stands apart from normal cognition” (Claxton, 2006, pi), then it is unlikely that a serious effort will be made in universities to engage with creative capability as a verifiable outcome of student learning.....it is altogether too idiosyncratic, too vaporous, and too unruly, in disciplinary terms, to fit within current rationalities for documenting graduate attributes as learning outcomes.’ (McWilliam and Dawson, 2007)

‘recent scholastic moves to unhook creativity from ‘artiness’, individual genius and idiosyncrasy, and to render it economically viable, team- (sic) or community-based, observable and learnable, make it difficult for academics to step around creativity’s challenge to orthodox teaching and learning. . . . barriers to creative enterprise are very much in evidence, both within organizational environments and the learning environments that feed into them’ (McWilliam, ibid)

Byron (2007) points out that, despite the considerable recognition for the need for change, ‘normal’ features of education (and business) include intolerance of ambiguity, lack of time and space for experimentation, fear of making mistakes, excessive enthusiasm for the corporate position, excessive stress and the lack of a sense of challenge

In contrast to this, programs in design tend not to emphasize qualities to do with acquiring knowledge and skills so much, but rather use a tapestry of processes and ways of working to apply knowledge in an ever-changing, multi-complex, decision-making and risk-taking environment.
Attitudes, expectations and expressions towards creativity that indicate that it is considered to be difficult to teach and difficult to assess or measure using traditional Methods

Our current work sets out to demystify some of these limiting attitudes.

Paul Rand is quoted as having said that the most important thing in his designing is ‘talent, and that’s all intuition, and you can’t teach that’. (Maeda, 2000)

In the Melbourne ‘Age’ newspaper in 2003, the then new director of the Australian Film, Television and Radio School, Malcolm Long, was quoted as saying that the school had a critical responsibility ‘identifying and supporting creative individuals’. This kind of statement presuppose that every individual out there is already creative - or not - through some accident of fate or fortune or genetics, environment or weaning, and it implies that there’s nothing you can do about it. All that can be done is to nurture the ones who somehow turned out to be creative.

We strongly disagree with this statement and below we have set out to prove that creative thinking can be improved through the teaching of effective strategies. These include at the simplest level to problem solving skills but extend to focusing and discipline intuition and unconscious processes.

There is an expectation of creativity in design

While traditionally programs involving design are based on an expectation of creativity in terms of their pedagogy (teaching and learning), from both students and industry, such programs naturally attract people who display creative attributes, facilitating and complimenting their expectations of creative outcomes and environment of the course. Therefore there is little resistance or fear in participating. Of course this is often not the case in other disciplines. In our project we set out to replicate those expectations and an environment where there is little resistance or fear towards creative activity. The outcomes of our workshops have clearly shown that while not revolutionary small changes have been possible in people’s confidence in behaving creatively.

The Effectiveness of existing strategies for teaching creativity in design at the University of South Australia

The current Visual Communication Design program has developed over the in a difficult environment with limited resources and over enrolments that ordinarily might have undermined it. But teaching staff promoting a methodology based on creative thinking and idea generation as basic principles, beyond skills and knowledge acquisition, have achieved attributes in graduates required by the profession and recognized as exemplary, as evidenced by the success of our students at national competitions and their outstanding employment record nationally and internationally

The Strategies for teaching creativity which we use in design at the University of South Australia are the basis for our workshop trials in other disciplines. They are as follows:

Valuing all parts of the process, even failure, so that students learn from that and
overcome fear of failing. Therefore we start with simple means, reduced complexity of content, technique and medium, so that students succeed and gain confidence and an understanding of basic principles quickly and easily, then build up to more complex and 'meaningful' work as confidence and understanding is achieved. We value and encourage trust in unconscious thinking processes such as intuition and inspiration by teaching students to structure and focus them. We teach our students to carefully observe the unexpected by modeling processes of random association and accidental juxtaposition, modeling the unconscious to do the same, and building trust in the process.

Challenging assumptions develops a questioning attitude, overcoming conventions to allow results appropriate for a rapidly changing environment and a provocative and even subversive approach reveals new ways of learning to students and satisfaction in enquiry. Robinson

Students need knowledge of the creative process so that they will not be insecure and fearful, which will undermine their creativity.

This approach is embedded into the courses, by teaching and assessment techniques using non-competitive structures and teams so that students feel confident to share their experiences and discoveries with each other, and to learn from each other's work. Collaborative work and experiences are fundamental to creative thinking processes, nurturing and encouraging outcomes not previously possible or expected. This is evident in our student feedback responses on the value of group work from the creative writing collaborative workshop. Mcwilliam and Dawson (ibid) are seeking 'to understand how teamwork allows individuals to achieve more creative outcomes than each of them alone is able to do. Csikszentmihalyi (ibid) insists 'that it is the community, not the individual that ought to be the unit of analysis in any investigation into how creativity gets fostered’

The course is structured so that things follow logically, building on one achievement to use it in the next or parallel one. Inhibitors, such as legal, technical or financial requirements must not be placed in the structure to limit ideas but used to enhance positive and novel decisions.

The design processes itself is a process of learning, using strategies to encourage 'transference' of what is learned in one design experience to another, giving rise to insights about both learning and creativity.

This transferability of creativity teaching strategies from design to other disciplines is well documented as from the following references.

Roger Martin, Dean of the University of Toronto’s Business School argues a need to apply the process of how designers think (creativity) to the thinking involved in business productivity. (Martin, 2006)

Jim Hackett, President and CEO of Steelchase Inc. describes the intersection of design and business, and argues that people in ‘knowledge jobs’ require idea production as well as financial skills. (Hackett, 2005)

In the second half of A Whole New Mind, Pink (2005) includes design as one of the six “senses” he identifies to be essential to get ahead in the new economy
David Perkins (1981) points out ‘[there is] evidence that thinking skills developed in one context will transfer to another context only when there is explicit teaching for transfer. Teachers need to encourage students to see the common principles that connect thinking in the arts to thinking in other domains’

Similarly from Goh (2002) ‘Knowledge transfer is a key dimension of a learning organisation. Learning occurs when knowledge in one part of an organisation is transferred effectively to other parts and used to solve problems there or to provide new and creative insights’.

**Methodology for overcoming impediments to creativity**

In our workshops to date, we have established that unless the notion of a creative dimension is embraced and developed to suit the characteristics of the particular discipline then it will not be successful (cf Perkins, ibid) and Goh, ibid). We recognize that the lack of success in its application in current courses is due to the fact that creativity is presented as another bit of knowledge rather than a structure that provides experience and generates confidence in its development and successful application over many facets of the course. It should be seen as an integral part of all areas of specialization,

We want students to be able to adapt to changing situations, see connections between things, create new meanings, change in innovative ways, and communicate in a variety of ways to establish a balance between knowledge acquisition and skills to develop the confidence to be innovative. To achieve this, our project promotes concepts such as risk taking, speculative, exploratory and investigative modes of learning, acceptance of mistakes and chance/random inputs, withholding judgment, ambiguous, metaphorical and analogous thinking, establishing curriculum structure that creates the ability to make intuitive leaps, challenging assumptions, delayed reaction/response and incubation, the role of play and dreams, and a greater emphasis on collaborative and team orientated activity.

**Why Structure and timing are important in the creative application of knowledge**

In the trial we conducted in the Entrepreneurial Enterprise course, for instance, the structure was that limiting or inhibiting factors such as financial restraints, legal considerations, viability, protection of ideas etc were introduced immediately prior to the decision being made as to what business to establish, which obviously would have a conservative effect on the decision making process. A restructure so that a decision was made before these constraints and limitations were introduced would allow much more imaginative decision-making. In fact they could be used as a creative spur to solve the problems presented by these restraints if they are applied to a decision already made. Further, in the existing program, creative idea generation methods previously had been introduced as a one off lecture. Therefore students did not experience the success or failure of these methods and did not have the opportunity to gain confidence in their ability to produce creative outcomes. In contrast our workshops embedded these as part of the decision making process in generating ideas for a business. It is evident that students now produced a much more creative outcome. Neither was there a reduction to basic principles in the original program. In our trial workshop an examination of the basic motives that lead people to start a business was used as a strategy to inspire diversity and innovation. We found similar limitations to creativity in the structure and content in other courses in our trials.
Methods of teaching creativity that embed and achieve ownership based on the outcomes of the trials

Outcomes of trials to date showed that there were a number of difficulties in the way students perceived the trials within their course. For example they expected teacher directed, individually assessment and predetermined outcomes; expectations that could be seen as being artificially directed and influenced by the course outlines and compliance with university rules. Even though this perception was indicated by Course Evaluation Instruments and focus groups etc. the outcomes themselves were measurably more diverse and innovative. These improved creative outcomes from our trials were based on the following ways of working:

• Starting with simple processes which show students that they can in fact be creative
• Demonstrations that new ideas are possible
• Getting creative results by building on what students know, their ideas, possibilities
• Using examples or problems that students bring to the course
• Group work and collaborative thinking
• Fitting creative processes to existing problems to be solved within the syllabus.
• Modeling thinking processes based on jumps, connections, perception shifts, using other people’s ideas and challenging assumptions
• Encouraging and modeling dynamic and fluid thinking processes including withholding judgment while producing a large number of ideas
• Process oriented tasks (where the process is modeled, not the outcome)
• Not using a set task
• Making it clear that there is not a predetermined or expected outcome or result.

Where do we go from here?

• We feel the need to investigate the relatively little understood neurological and psychological basis of creativity to give ourselves a greater understanding in order to establish the effectiveness of this strategy.
• We need to imbed creativity in the specialist discipline curriculum. Workshops need to be conducted within whole course curricula so that teaching creativity is seen as an integral part of that discipline rather than a specialist add-on.
• The initial evidence from our trials encourages us to develop more comprehensive curriculum models for the teaching of creativity that cross traditional subject boundaries and further explore the importance of collaborative/group work.
• In the long run we see the potential for a ‘Center for Creativity’ to promote, encourage and lead in establishing the value of creativity at all levels of university education and Assist and advise in its implementation in a wide range of curricula.

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