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# How Can We Nurture and Develop Creativity in First Year Design Students

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# How can we nurture and develop creativity in first year design students?

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## Abstract

This research paper investigates the perceptions of first year third level design students in regards to their creative thinking and use of creative strategies, while studying a first year design based curriculum in an Institute of Technology in Dublin. The research aimed to question students in a three-phase, sequential project. The first phase, questioned twenty seven students by issuing anonymous questionnaires to gather data on their methods of incubating design ideas, if they experienced any levels of anxiety when doing so, and their satisfaction levels in their design and creative abilities. Literature was reviewed to discover the attributes of those we perceive as creative and if those attributes can be nurtured. Further literature was researched on whether or not creativity can be measured and what are the barriers to creativity. Finally the literature review addressed what might be the correct creative environment for students. The purpose of the investigation of the literature and the questionnaire data gathering was to create a format for the second phase of the project, a one day creativity workshop that addressed issues on creativity raised by the literature and the student cohort. A Creativity Games Day workshop was designed and conducted with a volunteer group of ten. It was hoped the workshop would enhance student's belief in their creative abilities. The third phase of the project involved collecting further data by issuing a second questionnaire at the end of the workshop. A comparison of the data from both questionnaires was discussed to ascertain whether or not the participant's perception of their creativity levels had changed. This small pilot study, while acknowledging the limitations placed on the results due to the narrow experience and small sample size of the research, does suggest that creativity can be nurtured in a student cohort.

**Key Words:** creative strategies, creative thinking, incubating ideas, nurture, design, Institute of Technology

## Introduction

This paper initially investigates the perceptions of third level design students in a Institute of Technology in Dublin, regarding their creative thinking and use of creative strategies, and continues to research ways that may help students overcome the issues allayed in the findings. Erlinger (2009) believed whoever designs a part of the world cannot disregard the repercussions their design has on the world, agreeing with Otto Aicher, who stated, the designer is a kind of moralist, a judge, whose work is comprised of judgments. Many professions require creativity as a core skill, the word 'creativity' has been used as if it is a tangible commodity that must be developed in a time of economic recession. *"The future of Ireland lies in creativity",* Professor Declan McGonagle the Director of the National College of Art and Design stated on the 6 o'clock RTE News on April 10th 2011. The elusive commodity of creativity and creative thinking has been heralded as the panacea to rescue us from the grip of the recession. In the UK, The University of Brighton has developed a specific zone to enhance creativity this comprises of a large technology enhanced space; a seminar room for 50 people and offices for centre staff (Martin, Morris, Rogers, Martin & Kilgannon). It was launched in 2007 to enhance creativity in learning, and the facilitation of learning alongside the creative process.

The rationale for undertaking this research was as a lecturer in design it is hoped to provide first year design students with paths to enhance and nurture their creativity and assist them in their transition from previous education into a design based programme where their creativity will be measured. Robinson (2009) argued people are educated out of their natural creativity, and all children, initially, have full confidence in their own creative abilities. He believed education is dominated by systems of measurement, and imagination and creativity can be eroded by the pressure of obtaining grades. It has been personally observed that first year design students may lack confidence in their design abilities, therefore it was hoped to investigate how to address their fear, allay their anxieties, and provide creative thinking skills. By using these skills the students will develop confidence that they can reach a creative solution to a design problem. In the literature review, among others, Rogers' (1962) belief that creativity is a natural product of healthy development is explored, but that it may be blocked by a person's


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need for psychological defenses, however, teachers and others hoping to promote human growth can establish the conditions of psychological safety that allow individuals to develop. Students should be offered the safety that is associated with the three processes, acceptance of the individual, lack of external evaluation, and empathetic understanding.

**Creativity in Design Education**

While researching the literature on creativity it emerged that there are many books and journals dedicated to the subjects of creativity and creative teaching, but as the purpose of this research is to discover how can we nurture and develop creativity in first year design students, this review has set out to limit the research to that which is relevant to the defining, nurturing and development of creativity in design education. Firstly, the definition of creativity had to be explored, another emerging theme that needed investigating, was the traits of creative people and can they be nurtured? It was helpful to discover the motivators and methods of nurturing creativity, and how these methods can be used in teaching.

Wycoff (1991) defined creativity "*as new and useful. Creativity is the act of seeing things that everyone around us sees while making connections that no on else has made"* (p. 22) The definition of creativity offered by Csikszentmihalyi (1997, p. 27) was "*someone whose thoughts or actions change a domain, or establish a new one."* Otto Rank, (as cited in Karpf, 1953), defined creativity, as an assumptions-breaking process. According to Treffinger (1996a), creativity has no single, universally accepted definition but has always been an elusive concept; and he stated more than 100 definitions of creativity or creative thinking can be documented. Torrance (1987) defined creativity as, sensitivity to and an awareness of problems;

> *gaps in knowledge, missing elements, disharmonies, and so on; bringing together available information; defining the difficulty of identifying the missing element ; searching for solutions, making hypotheses, and*

> *modifying and retesting them; and finally communicating the results*. (p.22)

MacKinnon (1978) found creative people displayed originality, he continued to point out that this is not always to be associated with fluency of thought. He listed attributes such as independence, intuition, curiosity, receptiveness, willingness to learn, and a strong sense of destiny and courage, and suggested the successful creative individual had an ongoing belief in the worth of their creative efforts. Gardner (1993), studied biographical and personality factors associated with creativity, by looking at the lives and work of seven creators, Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi, whom Gardner asserted consisted of a fair and relevant representation of the seven intelligences. Similarities between those selected included, "*rapid growth, once they had committed themselves to a domain"*" (p.364), and "*the amalgamation of the childlike and the adult like"* (p.365).

Csíkszentmihályi (1996a) argued that creative people can adapt to almost any situation and use whatever is at hand to reach their goals. In summing up what makes their personalities different from others, the word he used is 'complexity'. Starko (2010) agreed that some characteristics of creative individuals seem to contradict each other: flexible yet logical, taking risks yet committed to task, escaping entrenchment yet finding order in chaos. Csíkszentmihályi (1990a; 1996b) believed the major distinguishing characteristic of creative people was the capacity to experience "flow," according to Csíkszentmihályi, flow is "*the state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it"* (1990, p.4), they are completely focused with total immersion in the task. In a further study Csíkszentmihályi (1996a) argued 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. More recently Csíkszentmihályi (2005) stated that one needs ten years of technical knowledge in any particular field to create something that was better than what was there before. Gardner (1993) also identified a pattern that he called the 10-year rule where creative individuals in different domains tended to produce major ideas,


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breakthroughs, or other creative products at approximately 10-year intervals. Gladwell (2008) concurred with Gardner and Csíkszentmihályi and suggested, apart from factors like parentage, peers and opportunity, it takes 10,000 hours of practice to become outstanding in a field of practice.

Another theme in Gardner's work (1993) was the enormous sacrifices eminent creators made for their work, sacrificing interpersonal relationships, living a simple life, avoiding physical pleasures, making work the preeminent force in their lives. According to Maslow (1976, pp.86-92) "*creativity is found in everyone, but it is most significantly developed in the self-actualised personality*." He defines self-actualisation as when a person realises what their full potential is and fulfills that potential. Bohm & Peat observed creativity arises out of a spirit of friendship characterised by dialogue rather than debate. "*A key difference between a dialogue and an ordinary discussion is that, within the latter people usually hold relatively fixed positions and argue in favour of their views as they try to convince others to change"* (1987, p. 241). Mezirow observed, *"approved ways of seeing and understanding, shaped by our language, culture, and personal experience, collaborate to set limits to our future learning"* (1991,p.1) and pointed out, there is a tendency for individuals to filter new experiences through existing structures and in order to 'avoid anxiety' or conform to peer expectations. 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 (Martin, 2001).

What can be done in educational settings to enhance the positive characteristics of students for creativity? The psychological climate in which we are working or studying has an overwhelming influence on the success of our creativity. A positive learning environment is influential in learner achievement (Goh, 1994; Fisher, Henderson & Fraser, 1997; Wubbels & Levy, 1997). Individuals need to build a climate to protect their own creativity from the indifference or hostility of a larger climate (Mauzy & Harriman 2003). Positive affect leads to greater creativity Greene & Noice (1988) found that the act of complementing students on their clothing, hair and/or jewelry improved their performance on creativity tests.

Rogers' (1962) believed that creativity is a natural product of healthy development, but also believed it may be blocked by a person's need for psychological defenses. Teachers and others hoping to promote human growth can establish the conditions of psychological safety that allow individuals to develop. Perhaps the most obvious type of acceptance is the teacher's willingness to examine student ideas, even when they initially appear strange or inappropriate. Csíkszentmihályi (1996a) found in his study of highly creative individuals that college or university represented a high point of life. It was where they found their voice, identified their vocation, and were exposed to teachers who recognised their unique strengths.

In Gardner's (1993), case studies on 19th century creators, one of the themes that emerged was the network of support that surrounded the creators during the times of their creative activities. In periods of intense creativity, cognitive support was needed in the form of someone in whom they could share their new found ideas and also affective support from someone whose friendship was unfailing; both of these roles could be met by the same person or by two individuals. Collins & Amabile (1999) believed the best way to help people to maximize their creative potential is to allow them to do something they love. Amabile (1983) stated that success in any aspect of education is linked to student motivation. Research indicated that intrinsic motivation enhances creativity while extrinsic motivation generally undermines it. Amabile (1996, p. 115) provided the following definition:

> *We define as intrinsic any motivation that arises from the individual's positive reaction to qualities of the task itself: this reaction can be experienced as interest, involvement, curiosity, satisfaction, or positive challenge. We define as extrinsic any motivation that arises from sources outside of the task itself; these sources include expected evaluation, contracted-for-reward, external directives, or any of several similar sources.*

However, both types of motivation may be effective at different stages of the creative process. While students are exploring a problem and trying to germinate ideas, they may be intrinsically motivated. On the other hand, extrinsic rewards may encourage students to learn the skills they need to complete a task or to persist when the initial


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enthusiasm wears off (Collins & Amabile, 1999). Research showed explicit instruction in strategies that produce creative products can help students become more creative (Runco & Sakamoto, 1999). Sternberg (1988) believed that tolerance for ambiguity is an indispensable and essential condition of creative performance. Creative solutions emerge over a period that includes moments of insight and times of struggle, persistence and confusion. Therefore the creative individual must be able to live with half-formed ideas and possible solutions. They must be willing to keep trying and experimenting if even if they are not sure if they are right.

Edwards, McGoldrick & Oliver (2006) found that students' creative work may be underestimated or dismissed within a domain because of the lecturers' unrealistic expectations of developing creativity. They argue that typically the creative expression of an undergraduate is different from that of more experienced practitioners, also that creative work can challenge fixed conceptions of the discipline that may partly derive from the academics having invested intellectual capital within a domain and an unwillingness to concede to new ideas. Runco (2007, p356) stated, "*Competition can inhibit creativity because it is extrinsic. It can, in this sense, distract the potential creator".* Collins & Amabile (1999) believed competition for awards for the 'best' product has a damaging effect on creativity, possibly because the vigorous activity and engagement necessary to produce novel ideas takes a great deal of effort, which extrinsically motivated individuals are unlikely to expend. This research will discuss the planning, delivery and analysis of one day of activities, where students are invited to join in playing games, in a non judgmental relaxed atmosphere, therefore It is important that the activities are intrinsically motivated and that the students do not feel that there are any competitive issues.

The popular conception for most people is that creativity is dependent on 'natural talent'; there is research that indicates that the skills involved in creativity are something that can be taught and learned. Torrance (1975) conducted several experiments during the 1970's to determine if creative thinking could be taught. His research concurs that the left hemisphere of the brain is primarily responsible for written and spoken

language, abstract symbolism, number operations, linear processing, rational decision making, and deductive logic. The right hemisphere is primarily responsible for spatial skills, pattern recognition, creativity, parallel processing, intuitive decision making, and deductive logic Torrance found brief and intensive training could change thinking to include more right-brain processes. After the training, subjects were better able to apply right and left hemisphere modes in a complementary way (Ferguson, 1990). One key characteristic of creative thinking is flexibility, considering more than one point of view. Role play and simulation activities are particularly effective strategies for developing this type of thinking because they involve looking at the world through someone else's eyes (Taylor, 1987). Torrance (1975) described this process in which students solve present and future problems through a variety of dramatic techniques as 'socio-drama'.

The findings of the literature on creativity are wide ranging from the various definitions on offer, to the differing traits, ways to develop and nurture creativity and the psychological climate of the place of study. Studies by MacKinnon (1978) and Maslow (1976) on traits that are inherent in creative people were self-acceptance, spontaneity, independence, tolerance, altruism and ethics. MacKinnon also suggested that the successful creative individual had an ongoing belief in the worth of their creative efforts. Perhaps the most obvious type of acceptance is a willingness to examine new ideas, even when they initially appear strange or inappropriate as was found in Csikszentmihalyi's (1996a) study of highly creative individuals, that college or university represented a high point of life.

**Research design**

The research method is led by the question and it was believed that an action research approach was best suited; a mixed methods approach of collecting both close-ended quantitative data and open-ended qualitative data proved advantageous to best understand the research problem (Cresswell, 2003). Attention was given to the order of


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the research questions and hypotheses, as the project consisted of a number of phases which took the form of a survey, analysis of data, a creativity games day followed by a further survey and further analysis. There are many questionnaires available pertain to measure creativity, however the interest lay in how the students perceived themselves. Permission to issue a questionnaire was sought and granted from the Head of the Department. First year design students were requested to volunteer to complete the first questionnaire during their first semester. Ethical issues considered in the research process included consent and confidentiality, the researcher relayed all important details of the study, including its aim and purpose. The confidentiality of the participants was also ensured and ethnicity, gender or age was not a factor.

A questionnaire on how they perceived their levels of creativity was anonymously filled in by twenty seven first year design students. The data analysis led to a review of the available literature on creativity; from which it became apparent there are various elements, both psychological and physiological, that need to be considered to create the correct emotional and physical environment that will assist design students in developing their creative skills. The data analysis and the reviewed literature were factors taken into consideration in the design of a one day workshop which sought to address the issues mentioned by the students in the initial questionnaire and to aid them in developing creative thinking strategies. The inaugural Creativity Games Day workshop took place on March 10$^{th}$ 2011, the sample size of participants was kept to ten, the reasons for this were twofold, firstly, as it was the facilitators first time to direct the activities it was envisioned that a small group would be easier to manage, and secondly to create easier interaction among the volunteers in a small group setting. The student sample that took part in the day consisted of;

- three students from first year interior design and furniture
- four mature advanced entry second year interior design and furniture students
- three access to education mature students taking a module in Colour and Perception run by the facilitator

A second questionnaire was issued on completion of the workshop to gather further data. Both the initial and the second questionnaires gathered quantitative and qualitative data.

The findings of the study were such that from a student's point of view the Creativity Games Day was a rewarding, positive and beneficial experience which enhanced their perception of their creativity. Hermann (1989) believed "*the main thing that hinders creative thinking is our belief that we are not creative"*. One hundred per cent of the students who participated in the workshop felt the creativity games day enhanced their belief in their creative abilities. The experience of being given time to allow themselves to focus their attention and awareness on creative activities will also help the students as they move forward in their creative thinking.

The initial questionnaire surveyed students on their perceptions of their creativity levels. This student sample consisted of twenty seven students studying on both the BA Interior Design and BA Visual Merchandising and Display. The commonality of both programmes is that they both require a level of creativity to be developed within the first year of study. Filling out the questionnaire took approximately fifteen minutes; it was divided into sections: self-perception, incubation of new ideas, level of satisfaction, level of anxiety and future skills development. The survey contained qualitative questions and also asked for participant's comments therefore gathering quantitative data, the answers being *strongly disagree, disagree, agree, strongly agree* or *don't know*. Three questions gathered quantitative data; if you indicated you were anxious about any item listed above, what do you think are the main reasons for your anxiety?, What might your tutor do to help reduce any anxiety, in particular over your creative skills? How useful do you think having good creative thinking skills will be in your career? Finally the participants were asked if they would be interested in attending a Creativity Games Day workshop. From the analysis of the data from the questionnaire and the review of the available literature a Creativity Games Day was designed.


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A one day workshop in creativity enhancement was decided as the best way to help students deal with the issues they felt they had to overcome during their first year. On analysis of the results further research was conducted on the best format for a workshop. Research was conducted to garner inspiration on how to conduct the Creativity Games Day; finally four publications that related most directly to the needs of the participants were chosen. These included a DVD, two texts and an educational website. The DVD was '100 pathways to creativity' (Porter**,** 2007), which contained exercises that took place with a group of third level students whose participation was recorded on film. Epstein's (2000) The Big Book of Creativity Games and Michalko's (2007) Thinkertoys: A Handbook of Business Creativity, were the texts used as inspiration for the activities along with drama games.

The Creativity Games Day workshop took place on March 10th 2011; the sample size of participants in the Creativity Games Day was ten. The venue for the workshop was a large studio. Participants were asked to arrive early., when a brief outline of the day and what it would entail was given, the students were aware that it was the first time that such a workshop was run by the facilitator. A detailed schedule of events for the day had been devised and all the different activities had been practiced. The day concluded when the participants were thanked for their participation and asked to complete an anonymous questionnaire. It was intended that factual accounts of their learning experiences would be gained. The questionnaire took approximately ten minutes to complete. This second questionnaire was designed to gather information from the participants at the end of the Creativity Games Day; any changes in data from the initial questionnaire was explored and discussed. Participants of the workshop were asked to regard the questionnaire as a critical analysis, and were informed that it would remain anonymous. The questionnaire gathered both qualitative and quantitative data. There were seven questions eliciting quantitative answers. The format for answering the quantitative questions was kept the same as the initial data gathering questionnaire. Questions eight and nine also gathered quantitative data and concerned the favourite and least favourite games of the participants. A further two questions gathered qualitative data by asking participants open ended questions regarding their experiences

on the Creativity Games Day and whether or not they thought it should be introduced into the curriculum. The data was analysed and compared to the results of the first questionnaire, this has led to a discussion on whether or not the hypotheses 'how to best nurture and develop creative thinking in a tertiary design curriculum' has been tested and what were the results.

**Results**

The first questionnaire was devised to attain data from design students on their self – perception, how they incubate new ideas, their levels of satisfaction with their creativity and their levels of anxiety. In the self perception section, surprising information was contained, although 88 percent were satisfied in their creative abilities and had confidence in their design ideas; 55 percent did not feel as creative as others in their class. Student comments regarding this included; "*Just anxious if my ideas are not right"* (anon) and *"because of the high level of creativity in my class it makes me anxious I will not be as good as everyone"* (anon). This highlights the dilemma of teaching design, as it is subjective there should not be a comparison of student's work; however the students compare and rate themselves. *"Sometimes when I get an idea, I'm not sure that it is a good idea for everyone. Maybe somebody else feels that it is a very common idea. Maybe the tutors feel nothing special"* (anon) and *"I suppose it's not being fully confident in my design ideas. Sometimes people don't fully understand your design idea, and you can't fully communicate your message"* (anon).

Amabile (1998) believed competition with peers was an extrinsic factor which decreased creativity. In a studio setting, the environment that nobody is more talented than anybody else should be created and the students work should be regarded as creativity in process. Positive or negative evaluation can bring creativity to a superficial level. It is hoped that the issue of comparison was addressed in the Creativity Games Day workshop by considering creativity to be more than just cognition, attention was paid to the socio-emotional, psychological and physiological environment (Littleton &


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Miell, 2004). This finding concurs with the literature reviewed that argued a positive learning environment is influential in learner achievement (Goh, 1994; Fisher, Henderson & Fraser, 1997; Wubbels & Levy, 1997). Individuals need to build a climate to protect their own creativity from the indifference or hostility of a larger climate (Mauzy, & Harriman 2003). Creativity is somehow related to the emotional state of the creator (Ferguson, 1990) (as cited in Walonick, 2010). From the analysis of the data the emotional environment of the design studio needs to be carefully monitored to address the fact that 55 percent of students did not feel as creative as others in their class. The methods of creating the correct psychological and physiological environments used in the workshop should be looked at and emulated in the design studio, such as the psychological factor of equality and safety, and the physiological factor of relaxing background music to create ambience.

The second section of the initial questionnaire quizzed students on incubation of new ideas, the majority of students, 81 percent enjoying spending time researching, brainstorming ideas, exploring new ideas, and ways to do things differently, nevertheless twenty six percent surveyed felt they could not always come up with creative ideas with one student commenting: *"not able to do it. Unable to think of ideas"* (anon). Activities used in the Creativity Games Day workshop set out to address this, with 90 per cent of the participants agreeing they had developed new ways of incubating ideas, student comments included: *"all different types of ways of generating ideas was very beneficial to me"* (anon) and *"new way of thinking"* (anon). It would be worthwhile considering installing some of the creative development activities such as 'Capturing a Daydream', 'Selling a Zork' and the 'Memory Game' into the general curriculum. This would also address the issues raised in the third section of quantitative data which questioned students on their satisfaction regarding their levels of creativity, with thirty seven per cent of students stating they sometimes felt as if they had no creative ideas to contribute to a brief. On completion of the Creativity Games Day workshop 100 percent of the participants agreed or strongly agreed with the statements 'the creativity games day has enhanced my belief in my

creative abilities' and 'I believe I can take inspiration from today's activities to help my creativity'.

The fourth and final section of quantitative data gathered in the initial questionnaire addressed the levels of anxiety the students experienced. Forty eight percent experienced anxiety when given a design brief with forty nine percent worried whether they have the creative skills to conceptualise a good idea. Most of the students, 71 percent, were anxious presenting work to the class, student comments included: "*presenting work in class makes me anxious because I don't like standing in front of a class"* (anon). In an effort to assuage the anxiety experienced by the students drama activities were included in the Creativity Games Day workshop to assist the students to develop confidence in front of their peers. The 'Worst Singer' activity was a particular demanding activity for those who experienced anxiety when speaking in front of other people. It was cited by two of the participants as their least favourite activity. However 80 percent of participants agreed that they were happy to take part in the tasks, comments included, *"Very positive, definitely made me more confident. I still can't believe I stood up and sang Happy Birthday!"* (anon) and *"I was really embarrassed about the singing but so glad I did it, made me feel I could push myself"* (anon). Ninety percent of the participants agreed that some of the activities took them out of their 'comfort zone': however this was not necessarily perceived as being a bad thing with one student commenting *"really enjoyed day, took me out of my comfort zone"* (anon) *and* another commented *"made me want to further develop my creativity by expanding ideas and taking more risks"* (anon).

The feedback from the students reinforces Jacksons (2006, p.9) insight; *"Higher education is full of intelligent, creative people and the professional act of teaching, with the significant autonomy attached to this role, provides fertile conditions for people to be creative in order to promote students' learning."* He believed rather than replicate well tried methods teachers should experiment with imaginative but riskier, perhaps less comfortable ways of doing things. The entire student cohort surveyed endorsed the suggestion that creativity enhancing games should be introduced into the curricular. The workshop set out to address the levels of anxieties experienced by the students


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regarding their creative abilities. Forty eight percent of the student cohort surveyed in the initial questionnaire had expressed concerns over their creative skills to conceptualise a good design idea, and 57 percent sometimes felt as if they had no creative ideas to contribute to a brief, however after the Creativity Games Day, 90 percent of the participants agreed that they had discovered new methods of incubating ideas. One hundred percent of the students felt the Creativity Games Day enhanced their belief in their creative abilities.

The initial questionnaire disclosed the issues the students felt stemmed their creativity level. These issues were addresses by the workshop, which came about as a result of a combination of research of literature and a review of the data garnered by the questionnaire. The respondents who took part have endorsed a Creativity Games Day workshop as a means of helping students develop the attributes necessary for success in a creative field.

**Discussion**

The problems and limitations faced by this research were what methods should be used to measure how students perceive themselves regarding their creativity, how to design teaching methods and material that will nurture creativity and how to determine whether or not these teaching methods and materials have improved the students thinking, the limitations of the smallness of the study is acknowledged, nevertheless, the research does suggest that creativity can be nurtured. However a critical approach should be ubiquitous in research (Bassey, 1999). This study, in order to substantiate the findings, would be required to be developed in a number of ways: a much larger formal study would eliminate any small sample bias: it should include students from a wider number of institutions to exclude any institutional bias and also from a wider spectrum of programmes, particularly other design based degree programmes, to eliminate any bias related to the interior design and furniture and visual merchandising programmes. Further improvements could be made by collating more data regarding the cohort sample, such as age at commencement of the programme of study. A larger study

should be conducted on a much longer basis, perhaps interviewing the same group of graduate's over their period of their four years of study. This would ascertain if the graduate's perception of their levels of creativity changes as their experience of design increases. It would also be helpful to be able to measure the value of a Creativity Games Day on these students from their various lecturers' perspectives. Examining the different inputs provided by the lecturers would allow a review to establish if the benefits detected by the students are singularly related to the Creativity Games Day, or are part of their integration within the college and the curriculum. Overall this would enable an evaluation to be made of the real benefits to programmes that include creativity workshops against more traditional programmes. The results could provide a basis for potential incorporation into the curricular of a Creativity Games Day. The colleges can then evaluate whether such workshops truly enhance the student's creativity and whether the resources employed in this type of programme are justified.

There are various elements, psychological and physiological, that need to be considered to create the correct emotional and physical environment that will assist students to develop creativity. Rogers' (1962) believed creativity is a natural product of healthy development, but it may be blocked by a person's need for psychological defenses; however teachers and others hoping to promote growth can establish the conditions of psychological safety allowing individuals to develop. Students should be offered the safety that is associated with the three processes, acceptance of the individual, lack of external evaluation, and empathetic understanding.

Was the Creativity Games Day a small step on the right direction to assist and enable design students to develop their creative skills? The findings of the study were such that from a student's point of view the Creativity Games Day was a rewarding, positive and beneficial experience. Hermann (1989) believed "*the main thing that hinders creative thinking is our belief that we are not creative".* All of the students who participated in the workshop felt the creativity games day enhanced their belief in their creative abilities; it is this self belief that will enable students to develop and nurture their creative talents.


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Was a one day workshop the correct method of enhancing the student's belief in their creativity? Due to time constraints in the normal curricular, the decision was made to hold the workshop in a one day time frame during review week, which takes place half way through each semester, during this week students review their work thus far and attend individual tutorials with their tutor. The main benefit of this was: the students had a whole day to invest in creative nurturing activities without having to consider the possibly distracting factors that normally take place during the course of a normal academic day. The venue was free for the entire day due to suspension of normal classroom activities due to it being review week. Nevertheless, due to the Creativity Games Day being held as a one day workshop during review week, many students who had expressed interest were unable to attend as they were returning home.

Would the activities have as much impact if held in small segments during class over the course of the academic year? It is believed that the ambience created by setting the correct psychological and physiological factors for the one day workshop would be harder to achieve in a normal class setting. The participants needed to be aware that their psychological well being was being looked after and that they were in a relaxed non judgmental environment. The awareness of delivering the workshop in the correct physical setting was also paramount to enable students to relax and as the activities were arranged in a sequential manner that enabled a flow from one activity to the next, it is believed the one day workshop had more impact due to the amalgamation of these factors and if used individually the creativity games could have less effect.

Did the particular cohort of volunteers affect the results of the second questionnaire? Originally it was believed the attendees of the Creativity Games Day would be first year design students, however only three of the first year student group of the BA Interior Design and Furniture students attended and non of the BA Visual Merchandising and Display Students. The remaining seven participants were mature advanced entry students and access to education students. One of the reasons for this, as mentioned previously, was due to time constraints the Creativity Games Day was held

during review week when many students returned home. The volunteer students were aware the format of the day was a creativity enhancing workshop and therefore were willing to participate. The volunteer cohort of first year students attended as they did have a wish to increase their creativity levels. The mature students who attended came for the same reason as did the access to education students. All participants had expressed a strong interest in attending with the majority willing to partake in the activities. It would be interesting to analyse the data from different cohorts to determine whether or not the feedback would be as positive.

## Conclusion

Should a one day workshop play an inherent role for all design students? The results of the survey suggest that all design students should be encouraged to take part; all of the participants agreed that a creativity enhancing games day should be introduced into the curricular. Some of the participants mentioned the confidence building aspect of the day; for many creative people, it often can be a lack of confidence that prevents them from reaching their full potential. Due to the feedback from the participating pilot cohort the inaugural Creativity Games Day workshop took place as part of induction week during the first week of college entry in September 2011. A total of 60 students took part from both the Interior Design and Furniture and Visual Merchandising degrees. This was facilitated by four tutors, due to time constraints there was no formal feedback in questionnaire format; however informal conversations with participating students concluded they overwhelming enjoyed the day, not only as they were given suggested creative thinking strategies but as they also felt it “broke the ice” meeting their peers and tutors.

It is hoped during the course of their studies the Interior Design and Furniture and Visual Merchandising students will grow in confidence in their abilities to find creative solutions to their design problems. Interior Design and Furniture students will be presented with many design briefs over their four years in college which will be graded on their level of innovation and their design solutions. Visual Merchandising students


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must deliver ways of creating interesting displays to engage onlookers and to merchandise retail spaces in creative ways. By enabling students with creative thinking strategies it is hoped any fears over their creativity will be addressed, therefore building their confidence to enable them in the realisation they will have the skills to succeed in college and the workplace.

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