Creativity: Can it be Taught and Caught?

WORKING PAPER DEVELOPED THROUGH A KNOWLEDGE SHARING CONFERENCE at IUPUI

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Explanation

This working paper has been produced by Norman Jackson in collaboration with the following teachers at Indiana University Purdue - Regina Turner, Elizabeth Ruben, Marc Mendonca, Fatimah Tuggar, Mary Ann Frank, Chris Maroldd, Pam Green, William Agbor Barigee, Henry Merrill, Cathie Carrigan and Suki Ekaratne and Victor Borden.

Its purpose is to capture the experiential knowledge of conference participants in respect of the key questions for enquiry – what is creativity and can it be taught and caught?

Key proposition emerging from discussion

The creative enterprise in higher education encounters many barriers and faculty may feel powerless to engage students in ways that will nurture their creativity. The argument is advanced that the development of an IUPUI community of practice around the idea of nurturing students' creativity would help other faculty to overcome the barriers to creativity in their environment.

Context

Creativity has assumed considerable importance in today's world, which requires most people to continually invent new ways of thinking and doing in order to adapt to and exploit continuing change. While there has been much discussion of the role of higher education in helping students to develop their creative capacities, we have much to learn about how creativity is perceived and developed in different subject contexts and different teaching and learning situations.

An enquiry-based method was used to engage participants and encourage faculty to think about the types of creativity they are trying to promote, the strategies they use to develop students' creativity and evaluate their creativity, and reflect on how students respond to such engagements. The conference connects to two similar conferences in the UK and the results of all these discussions will be available through the Imaginative Curriculum website http://www.imaginativecurriculum.net.

Creativity: Can it be Taught and Caught?

In order to understand the complexity underlying we posed the question- *What questions do we have to ask in order to understand and engage with this question?*

Definitional and conceptual issues relating to creativity
q   What is creativity?

- How do we define it?
- Who defines it?
- Who determines what it is /.is not?
- What is its significance – why do we want to define it?
- Is there an assumption that its a good thing?
- What assumptions underlie the idea?
- What benefits does creativity bring?
- Does creativity have an end result?
- Is it process or product?

Teaching / process of learning
- What do we mean by teaching in this context?
- How do we know we are teaching in ways that promote students' creativity?
- Under what conditions can it be taught or caught?
- What types of teaching work best?
- What kinds of teaching foster creativity?
- Who is qualified to teach for creativity?
- Do our individual value systems influence our ability to teach for creativity?
- Am I creative enough to teach it?
- What qualifications/experience are needed to teach for creativity?
- Whats the balance between creativity and practicality?
- Is creativity a process that has to have a product?
- What influence do disciplines exert on teaching for creativity?
- How do we develop the skills to support creativity?
- Do faculty care enough to encourage its development?

Catching/Assessing it
- What do we mean by catching creativity?
- Who catches it for what purpose?
- How do students learn to recognize and then build upon their creative ideas?
- Does it take creativity to catch it?
- What do we do with it when we have caught it?
- Since creativity is personal and subjective, is another person able to judge its worth quantitatively?
- Is it easy to recognize and difficult to measure?
- Do we evaluate the creativity of one's work or the ability to communicate it?
- Does our ability to recognize and reward creativity depend on our ability to communicate it (process/product issue)?
- Do we need to communicate process as well as product?

Students
- What do students understand by creativity?
- Are all students equally predisposed to creativity?
- Are they comfortable with creativity?
- Do they want to be creative?
- How do we motivate them?
- What are the multiple intelligences we draw on in being creative?
- Do students really care?
- What happens when students don't want to be creative?

Environment, culture, society
q How does the environment affect teaching for creativity?
q What kinds of cultures value creativity? Or do not value creativity?
q What type of institutional culture would encourage creativity?
q How can we have creativity in a culture *(institutionalized education?)* that seeks conformance?
q What influence does race and gender have on creativity?
q Does society really care about creativity?

Introspection / comments
q Assumes creativity is innate – why?
q Does early suppression of creativity kill it for ever?
q Is creativity as prevalent at all ages, in all places and under all conditions
q Is it inborn?
q What do you need to be creative?
q Is all creativity good?
q When is creativity dangerous?
q What kills creativity?
q Do teachers or certain types of teaching kill creativity?
q Is basic knowledge no longer valued?
q Can creativity be separated from money?
q Is financial reward a driver for creativity?

Insight: Are there as many paths to creativity as there are people?
The artist is not a special kind of person. Each person is a special kind of artist. Adapted from A. Coomaraswamy

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Conceptions of creativity

What conceptions of creativity do participants hold? This list is compiled from the the post-it exercise and the wider discussion.

Creativity as
q a human characteristic
q something innate but something that can be developed through practice
q new ideas
q new things
q finding solutions to new problems
q pleasing the client (the teacher??)
q winning clients
q gaining competitive advantage
q making money
q excellence
q pushing back the boundaries
q working across the boundaries
q opening up new possibilities

- q capturing the imagination
- q catching the attention of
- q as a process of design
- q freedom of expression
- q freedom to express from the heart – an emotional response
- q expression without boundaries that is not bound by another persons opinion
- q as eccentricity
- q to make connections and draw from diverse experiences to create new things
- q playing with knowledge

- q Everyone is unique and full of wonder – creativity is the way to get it out
- q Some people enjoy experiencing, it some do not
- q Creativity is okay to a point
- q Composing music
- q Cooking without a recipe
- q Creativity
- q Finger painting
- q Models of how things work
- q Creativity is a response to a condition that allows the creator to move toward equilibrium between self and the condition.
- q Raising a child
- q Thinking or acting outside the box
- q Creativity is a natural phenomenon in human experience – thus it should be a human value
- q Creativity is dangerous to the status quo
- q Its easy to recognize but difficult to measure
- q Doing music, visual and performing art
- q Writing

- q The process of living at the edge of chaos
- q Something you have to do: something you have to get out of you otherwise you are not satisfied
- q A force in nature that often lies dormant but can be expanded with awareness
- q A delicate balance
- q Is what we do a lot of in childhood but less so in adulthood
- q Something that society stops us doing or only upto a point

Insight: Is there a conceptual continuum of what creativity is and each individual needs to identify where they want to be in the continuum? The position may very from one situation to another but some people have the need to be more infused and engaged with their notions of creativity than others. Some people may not want to enthuse any of their actions with creativity. People have a right to chose whether they want to be creative or not.

The importance of context

Emerging from discussion was the belief that we cannot begin to understand what creativity means without understanding context. In the case of higher education there are many contexts for example (revealed in discussion).

q   *Individual learners* – the cultures within which they have grown, their personal histories and current lives, their personal beliefs and psychologies, attitudes and interests

q   *Individual teachers* – the cultures within which they have grown, their personal histories and psychologies, attitudes and interests, the cultures and structures within which they work (disciplines and institutions); their beliefs and conceptions of teaching and pedagogic stances. Their capacity for helping students to be creative. There is a strong perception that institutional procedural structures eg relating to curriculum design exert a strong influence on what teachers can do to encourage creativity.

q   The *disciplines* with their norms of behaviour, value systems, traditions, rules for knowledge production and validation. There is a strong perception that disciplines both shape notions of creativity and exert a strong influence of the extent to which creativity and the behaviours associated with being creative are permitted. *Creativity is acceptable only up to a point in my disciplinary context?*

q   *The wider society within which we live* – higher education cannot be detached from the society it serves. The messages that society sends about what is valued are a major factor in the attitudes and motivations of students and faculty. Higher education can accept the status quo or try to change the way society thinks about creativity if it believes creativity is important to its wellbeing.

Insight: Creativity is individually and socially constructed. The meanings of individuals and understandings of others may be quite different. Understanding creativity cannot be understood without an appreciation of the contexts in which it is constructed.

The Disciplinary Context

What influences does the discipline have on creativity?

This question allows us to examine conceptions of creativity and the ways in which creativity is manifested in disciplinary learning and practices. In building a community of practice it is important to develop and recognize disciplinary difference.

Science and engineering
q   Based on answering a question using a scientific method.
q   Creativity is not allowed because you are trained to find only one answer/solution.
q   But if it helps you find the answer, it is of value?
q   Creativity is only tolerated to a point.
q   The hypothetic deductive reasoning in the scientific method guides creativity in science.
q   Creative paradigm breakers have few friends initially.
q   Small advances are safer than riskier giant leaps.
q   Professional jealousy can often kill creativity.

Social Science
- q The discipline only advances through new ideas and understandings but don't get too creative in communicating them.
- q Research questions require creativity but research requires funding.
- q The discipline views creativity as being unscientific.

Fine Art
- q Creativity is encouraged, expected and developed.
- q In literature, creativity is the job of the writer, the reader will appreciate and go along but only to an extent.
- q Division by medium associated to gender/race/geography
- q Content based on gender/race/geography
- q Divisions in gender groups, in racial groups in geographical groups

Interior design
- q Creativity is more successful by following the process of design.
- q The battle of creativity among peers – who is more eccentric.
- q Subtle creativity often gets unnoticed
- q Boldness grabs attention even when its not particularly creative
- q Anything goes as long as it meets the needs/wants of the client
- q Creativity is what catches the clients attention.
- q Creativity is individual and therefore should not be evaluated against another.
- q Creativity is only valued if done spontaneously

Advising Students
- q Creativity viewed within a framework of course selection
- q Students are open to career paths
- q Each student is unique with rich and varied experiences
- q As advisors we must stay open to multiple ways of assisting students
- q Creativity is constrained by the curriculum
- q Administrative support for trying new ideas allows for thinking and teaching outside the box

Theatre
- q Raising the ordinary to the extraordinary
- q As capturing the imagination of the audience
- q Pushing the limit – body, voice, empathetic skills, possibilities

Education
- q Inspiration of faculty and students
- q AHA! Moments
- q New ideas, projects, courses, assignments
- q Dynamic
- q Its nature shifts according to shifting contexts
- q Creativity as telling stories
- q Narratives from many disciplines
- q In adult learning creativity of students involves them in designing their own learning experience
- q Learners may also teach.

q   Learners experiences and knowledge are valued

q   Teachers are facilitators and coaches.

What patterns can be deduced from these perceptions of the way creativity is viewed from the disciplinary perspective?

In this section I have taken your basic ideas and tried to develop them connecting them to my understandings. Please modify if you think I am misrepresenting the views expressed. Please add to these attempts to synthesise.

Disciplinary structures (meaning the organizing system around which the discipline is formed and its integrity is protected). Disciplines have their own ways of seeing the world. In some subjects (visual and performing arts and design) creativity is valued. But in other subjects (eg science and engineering) scientifically acquired knowledge and content knowledge that had to be acquired in order to think like a historian, chemist, lawyer etc. is valued above other sorts of knowledge. The high value of content knowledge leads to curricula that require mastery of content over other forms of learning.

Most faculty are inducted into this world through the educational process that makes them think like a historian, chemist, lawyer etc..Views on the world are controlled by explicit procedural knowledge (eg this is what you have to do to get your views accepted). Equally important are the unwritten rules that reinforce the procedural knowledge. Participants felt that these rules created a sort of game that had to be played if your views were to be accepted by peers. They amounted to a powerful force inhibiting creativity and resulted in feelings of: frustration, conformity and risk aversion in those subjects that did not value creativity and freedom, exploration and risk taking in those that did. The view was expressed that creativity could be threatening to disciplines as it continually drove people to challenge the status quo, challenge current paradigms and threatened rationality.

Institutional context

Institutional structures (meaning the organizing systems which regulated the behaviours of teachers and learners) were superimposed on the disciplinary structures. Such structures for example control the size and shape of modules, the level at which they are taught, the amount of credit that can be given and the way they are connected. Institutional structures and requirements (eg all IUPUI graduates should be able to do X, Y Z) and the institutions own unwritten rules can also inhibit the ability of faculty to create the spaces necessary to enable creativity to flourish. The view was expressed that there were fewer hoops to jump through in some parts of the university eg School of Arts and this was helpful in promoting an environment that was supportive of creative endeavour. However, even in these areas the disciplines themselves may use organizing principles (like 'medium') to control students' engagement with creativity.

Institutions develop cultures that support or inhibit creativity. It comes from senior administrators. The institutional mission, its subject mix (hard science and engineering, arts), the artistic/creative things that go on outside of formal education and the ways in which the institution values and treats its people all have a bearing on the climate for creativity.

> **Insight**: the combination of disciplinary and institutional structures and cultures exert powerful forces that influence the extent to which faculty can create opportunities for creative enterprise. While it is very difficult to change thinking and behaviour in the discipline it might be easier to persuade the institution (eg its educational developers, advisors on instructional design and even its senior administrators that there advantages in taking creativity seriously.

> **Insight**: It appears that faculty feel they are constrained by rules. But barriers are often a motivator of creativity. The way that faculty appear to overcome such constraints is through the control they exert over pedagogy. They convert content based curricula into processes for actively engaged learning.

Teaching for creativity

Can creativity be taught?

While a significant proportion of the faculty present believed that creativity was innate, Paradoxically, discussion revealed that they also believe that through their actions and behaviours as teachers they can empower students' in ways that help them recognise and develop their own creativity.

As in all good teaching the passion, enthusiasm and role modeling of the teacher for her subject provides the energy to enthuse students with a desire to learn in creative ways. One of the primary objectives of teaching for creativity is to harness the intrinsic motivations that drive people to higher levels of performance as they develop a deep interest and passion for their work. In teaching for creativity an important role of the teacher is to help students' construct meaningful and interesting learning projects so that they develop a strong sense of ownership for and commitment to their own learning enterprise.

> **Insight:** helping students to construct learning projects that interest them and help them tap into their intrinsic motivations for learning is an important reason for nurturing creativity. Too much learning in higher education is extrinsically motivated through assessment.

But passion is not enough and faculty recognize different instructional models some of which are better than others for the development of students' creativity. The emergent view was that creativity was best nurtured through facilitative models of teaching in which learners are actively engaged in discovering things for themselves and constructing their own learning pathways. The teachers role is primarily to create conditions that are challenging but supportive and elements of unpredictability and uncertainty. In these forms of teaching, students and teachers are participants and partners in the learning process. Some faculty are not comfortable and have no tradition or experience in these types of collaborative learning practices. These forms of teaching therefore require more personalized teacher-student relationships than is normal in didactic (transfer models of teaching) situations. Ones where the teacher is prepared to reveal something of herself and perhaps her own uncertainties and knowledge deficiencies.

Such unpredictable processes are by their nature formative – students' and teachers are learning how to learn in a new situation, one that none of them have encountered before. Faculty, being more experienced at learning, provide some structure and create the curricular space for learning in this way. Students need to have a sufficient framework for learning to be able to learn but then, through facilitation and encouragement, develop the confidence to think and work outside the structure that has been provided in order to invent new ways of working and developing their own resources for learning.

Faculty have to equip students with sufficient knowledge so that they can build on it and eventually think outside the box called *what I already know* in order to learn *what I need to know*. In this type of learning situation the environment is full of resources for learning and students have to think outside textbook knowledge to engage with the wider environment (including other people) in order to advance their thinking and learning. A key role of faculty is convince students of the value of curiosity as a driver of learning and to provide a safe environment that encourages students to take personal risks in the knowledge that they will not be penalized if they do not achieve all that was intended.

The view was expressed that the teachers' role is one of facilitating movement from states of confusion, uncertainty and perhaps dissatisfaction with the circumstances in which they find themselves to states of being more comfortable with these sorts of conditions and ultimately to being satisfied with both their learning processes and the results of their learning.

Students' creativity can be engaged by involving them in real world problems (authentic learning) in which there are no right and wrong solutions but many possibilities that have to be examined, evaluated and sold to clients. For example working with clients in business on their real world problems to develop a methodology to address the problems, develop solutions and present these in discussion with clients.

Learning situations that nurture creativity require learners to take responsibility for and be in control of their own learning. This challenges traditional teacher controlled- didactic instructional methods which many faculty are uncomfortable with. Two models seemed to emerge from the discussion. Model A is where a good teacher is able to facilitate students' learning effectively. Model B is where a teacher is not so good at facilitation and students have to do it for themselves. If students are entitled to engage in these types of learning experiences as part of a higher education curriculum the question then is how might the latter scenario be supported?

> **Insight:** Teaching for creativity requires a particular pedagogic stance that is facilitative, enabling, responsive, open to possibilities, and collaborative, and which values process as much as outcomes.

> **Insight:** Teachers operate in strong cultural and procedural environments that have significant impact on what they can do as teachers to promote students' creativity. In spite of, or perhaps because of, these constraints, teachers who care about creativity are able to overcome these barriers to create through their pedagogy, curricular spaces and opportunities for learning that encourage and reward students for their creativity.

Some dilemmas for faculty

- Faculty often do not know what knowledge students are bringing with them so it is not easy to judge what additional knowledge they need in order to work and learn in the ways described above.
- These ways of teaching require faculty to relinquish much of their control on the what is learnt, how and when it is learnt. Many faculty find it hard to give up their control.
- Teachers must not treat students as containers to pour knowledge into but to see them as people who can shape the learning process. Students and teachers are active participants and partners in the learning process. A key issue for faculty is how they enable students to understand themselves and their responsibilities as learners to take control of (regulate) their own learning.
- Some faculty are not comfortable and have no tradition or experience in these types of collaborative learning practices. In these types of learning environments teachers have to be prepared to reveal something of themselves and perhaps her own uncertainties and knowledge deficiencies: many faculty are not prepared to relinquish their authority and work as a participant.
- Students' attitudes and capabilities to working in this way are very different. For example the motivation of mature students studying a course because they want to change their career is very different to students who have come straight from college.
- The view was expressed that there were also strong cultural and geographic influences on students' attitudes to creativity suggesting that to some extent, predispositions and resistances were learned behaviours rather than innate.

Emerging from these perceptions is the insight that communities that are closed produce people with attitudes that are more resistant to change and less open to the sorts of engagements described above. Whereas communities/societies that are open to the exchange of people who are necessarily having to adapt but who are themselves influencing others by their ways of seeing the world, are more receptive to these forms of engagement.

Further questions that might be explored?

q   *How do students learn to recognize and then build upon their creative ideas?*

q   *What range of teaching and learning strategies are used to engage students in ways that are more likely to lead to creative outcomes?*

q   *What types of creativity are faculty trying to promote?*

q   *What methods of instruction a) inhibit b) promote creative responses from students?*

q   *What are the issue relating to teaching for creativity?*

q   *How do we develop the capacities and confidence of teachers to develop their practice to support creativity?*

How do students' respond?

If the right conditions can be created students respond well to these forms of engagements.

Initially, students may be very resistant. There is often a sense of confusion, they may not understand the goals of a process that values the way of learning as well as the outcomes of learning. Students often feel uncomfortable, they feel challenged and may feel they lack any sort of structure or framework to move out of this position. Students may even feel that it is the teacher and her interventions who is inhibiting their ability to be creative. Students like teachers need to feel satisfied with their learning efforts. Students respond well if the teacher can help them develop confidence and move to more satisfied states.

Students are motivated by the external forces on them. In formal education these forces are overwhelmingly assessment driven. Students respond well when teachers can harness the intrinsic motivational forces that drive them to higher levels of performance as they develop a deep interest and passion for their work. They have to become authors of their own learning.

Please add any additional perspectives
Can creativity be caught?

Assessment can be a major inhibitor of creativity. Learning emerges from creative processes in unpredictable ways. In some respects it is antithetic to outcomes based learning (OBL) that is predicated on the teachers notions of what will be valued at the end of the process. OBL also tends to focus on results rather than the process of acquiring the results – where creativity in action lies. It also does not permit failure (a distinct likelihood in high risk situations where students are attempting to do radical things for the first time). It encourages students to play saf
e.. to achieve the outcomes intended by the teacher rather than the outcomes the student would like to achieve. And few assessment systems reward student determined

outcomes. So assessment poses another serious structural and cultural challenge to the promotion of creativity.

The idea of catching something suggests that it is moving, transient, difficult to grab hold of, it is a concept that lends itself to metaphors eg catching the light. The question is who is doing the catching: teachers, students or both?

Some participants felt that creativity is a *know it when you see it* sort of thing. 'Wow that's clever.' 'I wish I had thought of that.' 'I wish I could do that.' 'I never thought of doing that in that way.' But do we all see things the same way?

Individuals can make judgements of worth (in terms of what they themselves value) but the issue is whether such judgements, which are inevitably subjective, have wider validity and when grading is a consideration whether such judgements can be made consistently.

A teachers perceptions of creativity are too limited and biased (too their own values) to be the only catcher. Neither can the teacher really appreciate the individual contexts from which students' creativity has come. Perhaps a diverse group of teachers might be a more reliable way of judging creativity to minimize the bias of an individual ie more than one teacher catcher.

But perhaps real empowerment of students only comes when they can catch their own creativity. Here the analogy with catching the light through reflection is an appropriate metaphor.

If, as was argued earlier, creativity is socially constructed then it is obligatory that the creative actors/artists (the students) are themselves involved in decisions about creativity. This raises the issue of students' involvement in negotiating the criteria against which they will make claims and by which they will be judged. The extension of this logic is that the role of the teacher is to equip students with the necessary know how to recognize and judge their own creativity, and to develop the evidence to substantiate any claims.

If, as was asserted earlier, it is important that teachers model their own creativity then they are also metaphorically throwing creativity for students to catch.

Another view expressed was that teachers have to help students acquire the rules (of learning in the subject?) and then help them move beyond these frameworks for learning. Perhaps the ultimate purpose of a higher education might is to help students to develop the capacity to invent their own frameworks and processes for learning (for many different contexts). This type of creativity sits at the heart of the educational enterprise.

Taking risks by moving into the unknown is part and parcel of trying to creative. The risk of failure, (dropping the ball) by not accomplishing goals that have been set is higher. Teachers have to be willing to let students *fail* (not achieve all they wanted to achieve) and value failure if this is the result of creative endeavour.

Insights: outcomes based assessment systems that assume that all learning can be predicted and that the teacher is the only person who can define what the outcomes should be is antithetic to learning that emerges in unpredictable ways – such as is produced through creative processes that pursue a sense of direction rather than a preordained pattern. Here is another barrier that can only be overcome if learners become partners in the assessment process.

Perhaps the primary role of the teacher is not to define creativity for students and assess them against their criteria. Rather it is to help students recognise their own creativity and help them express it and make claims against the evidence they feel is appropriate.

The metaphor of *catching the light* through a reflective process might be appropriate for catching creativity which requires people to be conscious of their own means of engaging with complex learning.

Concluding comments

The model of learning in academia is not the same as the models of learning used in corporate America. Many organizations in the corporate world embrace and value the idea of creativity as a means of gaining competitive advantage and advancing profits. The for profit motive is a powerful motivator of creativity in the world of work. The utilitarian view of creativity would argue that students will be better prepared for life in the real world and will gain advantage in the employment market if they invest in recognizing and developing their own creativity. The humanistic view is that creativity as personal expression is a necessary and important value for society to nurture. Is there any reason why higher education cannot embrace both of these perspectives?

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