HOW CRITICALITY AFFECTS STUDENTS’ CREATIVITY

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Abstract
In this chapter, I analyse if there is an inherent paradox between creativity and criticality. With critical thinking being among the core values in higher education, can we then also foster creative thinking? In answering this question, I use the masters degree LAICS (Leadership And Innovation in Complex Systems) as a case study. Interviews with students are used to shed light on creative teaching and learning. It is shown that creativity can be taught by teaching creatively. I conclude that creativity and criticality are not entirely different ways of thinking and both are important in academia, but creativity can be hampered by our norms, rules, and structures.

Introduction
In the knowledge society, creativity and innovation are in high demand. There is increasing focus on the role of education as a place not only for unlocking the creative potential of gifted students but also for teaching all students how to be creative and innovative (Craft, 2006). While few universities offer courses on creativity per se, an increasing number of courses in innovation and entrepreneurship have seen daylight over the past decade. This chapter sees creativity as a step towards innovation. When wanting to distinguish between creativity and innovation, Amabile et al. (1996) explain that all innovation begins with creative ideas. They further explain that innovation is:

“the successful implementation of creative ideas within an organization. In this view, creativity by individuals and teams is a starting point for innovation; the first is a necessary but not sufficient condition for the second” (Amabile et al., 1996:1155).
Hence, creativity is intimately related to any innovation process. The theme of this chapter is how we can teach creativity and innovation in academia. It addresses an apparent paradox: there is an increasing interest from universities to run courses on creativity, but universities may not be the right place to host such courses. As Oliver et al. (2006) have pointed out, many students experience a conflict between being ‘creative’ and being ‘academic’. Moreover, in academia, criticality is seen as a virtue (Phillips & Bond, 2004; Pithers & Soden, 2000). There is emphasis on critical thinking, on fault finding, and on deconstructing and searching for weak points in an idea or argument. The culture is often quite individual at least in terms of assessment which is based on individual performance. In contrast to this, the optimal conditions for creativity (in its ‘conventional’ form) have to do with finding the strong points in an idea. In order to reach a brilliant idea, you have to accept that it may come after 29 miserable ideas. In a creative team, one should build on each others’ ideas, be cooperative and constructive (Darsø, 2001). Hence, one must ask how we can foster creativity in higher education where criticality is seen as a vital teaching and learning goal.

The chapter discusses questions such as what is creative thinking and how does it relate to critical thinking? Do teaching the subject matters creativity and innovation mean that we have to be creative and innovative in our way of teaching? If yes, how do we practice what we preach? Hence, what is creative teaching and learning and how can this be assessed? The relevance of the chapter is twofold; as stimuli for the theoretical discussions of learning and creativity and as contributions to practitioners teaching innovation and creativity in academia.

**Aim and method of the chapter**

The chapter is practice oriented. While it discusses the concepts of creativity and criticality, the main emphasis is on teaching methods and assessment. The approach is inductive, taking departure in a concrete example of how creativity and innovation is taught at the degree programme in ‘Leadership and Innovation in Complex Systems’, LAICS. This is a two-year, part-time, executive masters programme offered by the Danish School of Education, Aarhus University in cooperation with Copenhagen Business School, Denmark. The empirical material consists of interviews and observations.
By basing the chapter on empirical material from LAICS, I aim to shed light upon how creativity and innovation are taught in practice. Although we often know how it would be good to teach and assess, this may not be what we do in practice due to various constraints. By analysing what constitutes creativity and learning in a concrete case, I hope to be able to increase our understandings of these concepts at a more theoretical level. Upon this level we can further develop our understanding on how to teach creativity and which teaching methods have a positive effect on students’ creativity and learning. The chapter is an attempt to contribute to the ‘second generation’ creativity discussion (McWilliam & Dawson, 2008) on how to foster creative teaching and learning in academia.

The empirical material for this chapter consists primarily of qualitative interviews conducted in the form of action research. I firstly interviewed five former students, then I taught my present students interview techniques and told them to interview each other using a time line, which I gathered afterwards. In addition, when I was teaching them to do a timeline interview, I got them to participate as a focus group to consider their learning journey. I also interviewed the current study leader.

From the outset of writing this chapter, the apparent paradox between criticality and creativity intrigued me, but when I conducted the interviews, I concentrated on the learning journeys and only addressed this paradox towards the end of the interview. When analysing the interviews, however, a tension was detected between creativity and ‘alternative methods’ on the one hand and ‘traditional, academic methods’ on the other hand. Hence, the analysis has been an iterative process, which has homed in on the interviewees’ learning journey tales and on the issues of creativity and criticality.

Creativity and criticality – an introduction
Given the lack of an established, commonly agreed framework for understanding and conceptualising creativity, I adopt an exploratory approach. I am inspired by Bohm (1998) who refuses to capture what is ultimately indefinable. Yet for the purpose of discussing creativity versus criticality it is useful to have an idea about what the two concepts entail.

In psychology literature, there are numerous definitions of creativity depending on the perspective of the author, but divergent thinking, diversity, originality, and novelty are the prevalent keywords (e.g. Runco, 2004; Simonton, 2000; Sternberg, 2006). Some also
include an element of appropriateness of new ideas (e.g. Lubart, 1994; Sternberg, 2006). However, I find that the discussion of value or appropriateness of novel ideas belong to the realm of innovation and not to creativity. For the purpose of this chapter, I find it useful to look at the discourse employed by the editors of “Developing creativity in higher education” (Jackson et al., 2006). This states that creativity has to do with our ability to imagine and invent new worlds for ourselves. In their book, the term creativity is coined slightly differently in the various chapters, but there seems to be an agreement that higher education should foster creativity both at individual and at institutional level. Hence, creativity is a ‘talent’ that we all have, which can be nurtured, rather than a gift from nature for a selected few. In the literature on criticality, this is rarely seen as a ‘gift of nature’, but as a skill all students possess (although to a varying degree) and one of the important duties of higher education is to foster critical thinking abilities in students. Although the conceptualisations vary, criticality is always related to rational thinking. Often it also entails deconstructing ideas or problems by being analytical, selective, and evaluative (see e.g. Bailin et al., 1999; Phillips & Bond, 2004; Pithers & Soden, 2000).

As noted by Bailin (1987), creativity and criticality are often portrayed as two different ways of thinking, requiring different pedagogies:

“Critical thinking is seen as analytic. It is the means for arriving at judgements within a given framework or context. Creative thinking, on the other hand, is seen as imaginative, constructive, generative. It is what allows for the breaking out of or transcending of the framework itself” (Bailin, 1987:23).

While it is commonplace to contrast creativity and criticality (e.g. de Bono 1977; Jackson et al. 2006) – and this was also my initial thought when I began writing this chapter – there are also a number of similarities. Some researchers even see the two ways of thinking as intertwined (e.g. Belluigi, 2009; Edwards et al. 2006; Reiker, 2010), while others have definitions that blur the differences. A case in point is this definition of creativity by one of the creativity’s ‘grand old men’ E. P. Torrance:

“Creativity is the process of sensing difficulties, problems, gaps in information, missing elements, something askew; making guesses
and formulating hypothesis; possibly revising and retesting them; and finally communicating the results” (Torrance, 1988:47).

This is close to some of the conceptualisations of criticality mentioned above. In particular, problem solving seems to call for both creative thinking and critical thinking. Hence, even though there are differences between the two ways of thinking, the literature is not entirely clear on what the difference entails. Table 1 is an illustration of some of the differences between creativity and criticality as these concepts are described in the literature.

<table>
<thead>
<tr>
<th>Creativity</th>
<th>Criticality</th>
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<tbody>
<tr>
<td>Imaginative</td>
<td>Rational</td>
</tr>
<tr>
<td>Non-judgemental</td>
<td>Evaluative</td>
</tr>
<tr>
<td>Generative</td>
<td>Selective</td>
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<tr>
<td>Holistic</td>
<td>Analytic</td>
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<tr>
<td>Constructing</td>
<td>Deconstructing</td>
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<tr>
<td>Transcending the framework</td>
<td>Within the framework</td>
</tr>
<tr>
<td>Open to serendipity</td>
<td>Work systematically</td>
</tr>
<tr>
<td>Iterative process with detours</td>
<td>Linear process</td>
</tr>
</tbody>
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Table 1. Idealised differences between criticality and creativity.

The conceptualisation of creative and critical thinking also depends on the writers’ epistemological point of departure – whether one sees knowledge as given or as constructed. When knowledge is seen as a given, it is the product, not the process, which is important; and vice versa. I find that concentration on product or process does not correspond to critical or creative thinking respectively, instead it relates to the epistemological view of knowledge.

In the following, I apply an understanding of criticality and creativity which means that critical thinking can be creative in questioning that which is often taken for granted. However, it can also be futile for creativity due to the focus on deconstructing rather than constructing. Hence, I suggest that critical and creative thinking are not two entirely separate and distinct ways of thinking. After analysing my empirical material, I will address the question of creativity and criticality again and hopefully develop a better understanding of how we can teach creativity in higher education where the emphasis is on criticality.
The LAICS case and the empirical material

The LAICS masters degree focuses on innovation and leadership from a ‘real-world’, practice-based and social skills perspective using arts-based methods. It is cross-disciplinary and targeted at organization leaders, senior project leaders, and key specialists working with leadership, innovation, and business development. The curriculum is designed with emphasis on the learning process rather than the content. Hence, it belongs to degree programmes with a learning-based paradigm rather than a syllabus-driven didactic paradigm (Nygaard & Holtham, 2008). The pedagogies used at LAICS are inspired by John Dewey’s (1933, 1938) and Donald Schön’s (1983, 1987) educational philosophies in which building on experience, practice-centred experimentation, and reflection are fundamental (LAICS, 2010). The process focus is important, and it relates to the view on creativity. Many creativity researchers have noted the difference between seeing creativity as related to person, process, or product (e.g. Lubart, 1994; Runco, 2004). The approach applied at LAICS is related to seeing creativity as process when it comes to creative teaching and learning.

In the summer of 2006, the first students were admitted at LAICS and two years later, the first cohort finished their masters degree. Every year, some twenty students are admitted. Not all finish within two years. As each semester (called a module) is paid for separately, modules can be taken as single modules and it is possible to take a break between modules. Each module consists of three seminars. The duration of each seminar is typically 3½ days and they are held as residential courses at nice conference venues in Denmark. One seminar in each module is held abroad. There is a module coordinator for each seminar and one member of the faculty, often the module coordinator, is present during the entire seminar, facilitating the processes and making sure that the different activities are connected. In between the seminars participants complete assignments, work in groups and participate in virtual dialogues with each other and the faculty.

Both abroad and in Denmark, each seminar begins with a ‘check in’. This means that all participants, while sitting in a circle, take turn in telling “Where am I?” and sharing with each other how they feel upon arrival. Hence, it is a means of arriving, of leaving work and private life behind in order to be able to concentrate fully on the seminar ahead. The check-in also helps build an atmosphere of trust, because the participants can tell what is on their mind, their concerns or changes in life, without anybody interrupting or even commenting. There is no time limit, but usually each participant spends a minute or
two. It is not compulsory to say anything. After the check in and a presentation of the seminar programme, two ‘gardeners’ are found. The use of gardeners is based on Darsø’s (2001) innovation research, which shows that relations are extremely important. Even though the goal of an innovation process and of a degree programme is different, the gardener role is useful for both, as the gardener helps the group to build trust and create the right space for creativity and learning. The responsibilities of the gardeners are the wellbeing of the participants, the group climate and energy level; they help creating positive relations, creating common ground, getting to know each other’s strong points. They do so by being in close contact with the faculty during the seminar and they have 30 minutes every day where they can address the needs and wants of the participants. This can be discussing the curriculum or a burning question, but most often it is some sort of physical activity or play.

The seminars consists of a combination of lectures, group work, and some type of physical engagement with materials, for instance by prototyping innovation spaces, drawing, or using clay to express leadership. Due to the understanding of creativity as a process, we use tools and techniques from fields such as facilitation and process consultation, which do not concern creativity but are by definition very process focused in their approach to teaching and learning. This means that the participants also gain a repertoire of methods such as Open Space and World Café, which are useful for leading the creative process. Time for reflection is important. Therefore, there is time set aside for writing in a ‘learning journal’ (a log book for reflections, questions, and learning points) around lunch and before dinner. If possible, group discussions can take place as ‘walk and talk’ making the most of beautiful surroundings. After dinner there is often group work for a couple of hours. After that the participants socialise. This is an important part of the seminar and of building relations and an atmosphere of trust. Each seminar ends with a standard written and an oral evaluation as well as a ‘check out’. The format of the oral evaluation varies; often the gardeners are involved in deciding how to evaluate. The check out resembles the check in, but is concerns “What do I take with me from the seminar?”.

The seminars are planned with three intertwined elements in mind: process, practice, and experiments. The process orientation means that the faculty not act as teachers but rather as facilitators stimulating the participants’ learning. While faculty plan each seminar carefully and make a detailed script, it is important to have a programme that leaves
room for what emerges. Emphasis on practice entails that the participants’ own cases are used as examples whenever possible. The learning approach of LAICS is experimental and experiential, this means that we try to experiment, play, and reflect as a supplement to listening to lectures. The presentation of the Theory U described later is an example hereof. Finally, the use of the physical space is also considered – what seating arrangement will be most useful for the purpose of the day? How can we use our bodies and not just sit down all day? How can we benefit from the natural surroundings? We want to negotiate the physical space to ensure a pleasant and energetic atmosphere.

In the following analysis, I combine information from interviews with observations made as member of the faculty.

**Students’ learning journey tales**

The pedagogies of LAICS concentrate on the learning process rather than the content. This focus is related to an understanding of creativity as a process and thereby time becomes an important element. The learning process can be understood as a learning journey, a word used quite often at LAICS. Therefore it was natural to ask the interviewees (former students) about their learning journey. So I have decided to structure the following analysis of the interviews as a learning journey tale.

It is common to open a tale with the beginning. And the first step in the LAICS learning journey for all students was to apply for admission. Why did they choose LAICS? The interviewees wanted an academic degree; hence a course in innovation outside academia was not an option. The alternative, for some of them, would have been an MBA. They stated that the interest in obtaining a university degree was for career purposes and that for a number of reasons they found LAICS the most attractive on the market. While they showed interest in the teachings on innovation and leadership as well as the alternative teaching/learning approach, none of them expressed a particular interest in the offerings of academia *per se*. The attraction of academia was to receive a diploma in the end.

Some of the interviewees were particularly interested in the structure of three residential seminars per semester rather than having more frequent lessons at university. This fitted better with a busy work life, which many of the students lead while completing the masters degree. The seminar format is also quite important for the teaching style and for the learning outcome, as follows.
The first seminar at module 1 was held in Denmark and here the students were exposed to the learning culture and some of the teaching methods they would meet throughout their education. A substantial part of the seminar is spent on relationship building. But as one of the participants explained, part of this was done as integral elements of other subjects, which meant that for him, the intense and profound relationship development also took place subconsciously. An actor worked with the group and used image theatre as a means to discuss obstacles to innovation. They made body sculptures of and with each other instead of having a traditional lecture. Some participants saw this as a playful and very open approach towards the journey they were now entering. Time was also spent on making a ‘codex’ for how to work and learn. The important aspect of this is not the codex itself – it is discussed and may by revised at the second seminar – but it is the process entailed in making the codex (Darso, 2008). This allowed the participants to share their experiences with learning environments, to empower them and take responsibility, and also get to know each other. Hence, it was an element in constructing an atmosphere of trust and curiosity. Body mapping was another technique used for getting people to know each other. This method entails that people move around in the room (or preferably outside) depending on their preferences or interests and talk to people with similar preferences and interests. For some, the first seminar was a shock, while others found it very stimulating and interesting:

“I was pleasantly surprised at the first seminar because it was so creative. Many were frustrated, because it was so open and not structured. I could deal with it because it reminded me of the creative process. Afterwards we could all see why there was so little structure”.

It comes as no surprise that those students who were already familiar with creativity (e.g. being part-time artists or having an educational background as architects) found the session stimulating. One of the interviewees explained how she had experienced the first seminar as unstructured and very confusing, even frustrating, leaving the seminar with more questions than answers:

“I had a feeling of having wasted three days”.

But already when preparing the first assignment, she became a little more positive:

“I could feel that I had some new thoughts, was thinking in a new way”.

And in hindsight, she could see how the first seminar had made sense, how it had prepared her for the journey.

The drawings of the learning journeys made by present students showed that for many, the seminars abroad had been more intense and for some had led to more learning than the seminars in Denmark. The reasons for this are manifold, as revealed during the in-depth interviews. In my observation, being abroad increases the concentration on the task at hand. There is no possibility for attending a meeting, going home at night, or leaving earlier. Also, there may be a time difference which makes it more difficult to be on-line with family, colleagues, or clients. Also, seminars abroad are held in beautiful natural surroundings such as in the Rocky Mountains. Here, the seminar is held at The Banff Centre, which has post-graduate training in leadership working with an arts- and nature-based approach to leadership and complexity. Many people find the natural surroundings stimulating for learning and reflecting. Third, the content of the seminars abroad is focused inwards, for instance looking at personal leadership, personal innovation spaces, and they are quite experimental. All together this meant that some of the students had a different, a more intense experience than ‘at home’ and for some this also increased the learning outcome. Interviewee comments included:

“Being in a completely new context and spending time together have meant a lot. The joint curiosity, the joint wondering, the communities of interest. Having gone for walks, discussing and reflecting first with one person, then with another, have given different perspectives and inputs. It has been really, really good.”

“The seminars abroad have been more creative and I have liked that.”

The work with Otto Scharmer’s Theory U (Scharmer, 2007) is an example of the various approaches and methods used. The participants are introduced to theory U during the second seminar at module one. The theory U concerns leadership and innovation from a very personal
perspective. The seminar usually takes place in France and is thus one of the seminars abroad with a personal and inward perspective. The theory U is both explained in a ‘conventional’ academic way, but is it also conveyed by the violinist, Miha Pogacnik. His music is used as a means of understanding different levels of creativity (Darsø, 2008). Important aspects of the theory U are presence and sensing. These aspects are returned to later in the programme in different ways. At the seminar in Banff, for example, there is a walking meditation, where the participants are trained in being present ‘being in the now’ by paying attention to what there are sensing through a walk in the natural surroundings. This is a very practical and non-academic way to approach some of the key concepts of Theory U. At the last seminar on module three, there is a session on mindfulness. The session is a combined practical and academic introduction to the concept of mindfulness and how it can be practiced. While some of the participants disliked the walking meditation in Banff, others really enjoyed it. However, when we discussed the learning points from Banff at the proceeding seminar, some of the negative perceptions had changed. In hindsight they appreciated the experience and what they had learned. During the course, there is a growing awareness that learning may develop gradually and sometimes be ‘delayed’.

In general, the facilitative and process-oriented teaching style and practice-based methods in combination with the residential seminar format has created a special atmosphere. As one student explained, there had been a space for wondering and room for reflection. Among the students themselves, there have been many academic discussions. Some said that it was primarily amongst them that the students had analysed and discussed the curriculum, as there had been little time for that during the seminars. Few teachers explain the curriculum; instead they deliberate a different but related topic or story. Sometimes there is group work discussing the curriculum during the seminar. Otherwise some of the participants made sure to discuss it anyway. The time set aside for reflections every day at every seminar had often been used for these discussions. Many emphasised the importance of time for reflection. While some had enjoyed using the learning journal given for each module, others admitted that they had never used it as writing was not a useful tool for reflecting:

“I have been reflecting but not through the tip of a pen.”
During my informal conversations with the students, they have expressed a wish for discussing the curriculum more during the seminars. It is not entirely clear whether the students are calling for more traditional, academic teaching or for more criticality in the approach – there are a number of different voices. During interviews, however, nobody has stated this. There has been more focus on taking responsibility for their learning not leaving it up to the teacher or the way of teaching:

“It has been very ambitious, but at the same time there has been room for people engaging in different ways... It’s up to you and the projects you make. What you give is what you get.”

This difference in perceptions comes as no surprise. The kinds of grumble heard in informal conversations usually change when people participate in a more formal and thoughtful situation such as an interview. This does not mean that the grumble is invalid, just that we as human beings may have different and sometimes conflicting views.

An important part of the learning journeys was the assessment process. The students had to write a 15-page mini project for the first three modules. The mini-project was presented and defended through an oral exam. The mini project should concern the student’s own practice and this should be analysed in relation to models and theories presented in the literature. In this context it is interesting to see how assessment affects learning. From the interviewees’ learning-journey tales it seems that this varies quite a bit although they all agreed that the assessment method was very traditional and academic, while the teaching methods were seen as alternative and creative. One of the interviewees was quite satisfied with the very traditional assessment which made him feel safe, on familiar territory. Another one stated that the assessment was a means to use the curriculum as this was not discussed very much during the seminars. While a third student felt that the seminars did not prepare her for the type of assessment used and that the assessment did not ‘measure’ the learning outcome of the seminar but only assessed some academic qualifications which had not been part of the teaching during the seminars.

The students have quite varied educational backgrounds ranging from bachelor degrees to PhDs and from nursing to engineering. As there is little emphasis on teaching academic writing and other academic skills, some students are better off when it comes to writing their mini projects and perform well at the oral defence. The last
module consists of two seminars which aim at helping the students write their thesis. The first seminar concerns research methodology such as action research and qualitative interviews. The second seminar is a writing retreat where students receive supervision from the faculty and help each other through peer-learning. The thesis itself is a traditional piece of academic work: 40-60 pages with a critical analysis of a practice-based problem. The thesis is defended at an oral exam similar to the mini projects. Some enjoyed writing the master thesis, while others found it an academic exercise they had not been adequately prepared for.

The last step in the learning journey concerned what the interviewees had learned and how they had applied it. A common expression of what they had learned was that they saw things in a new way. They had gained a new way of perceiving and reflecting about problems or situations in their respective organisations. Also, they had learned about different creativity theories and innovation model and experimented with different creativity tools and techniques. Whether they could be applied directly or not, the learning outcome was still beneficial. As expressed by one of the interviewees:

“There are some tools which I wouldn’t use in my current job, but there are a number of tools and processes which are useful... And even those things where I thought ‘that’s too far out’ were good because at least I have tried it and know what it is.”

While another one said:

“I have applied most of what I have learned directly. When we have learned something new, I have used it for my next project with a client.”

Some also noticed how the study and the new ways of thinking had changed them as persons:

“When reading so much and trying so many new things you automatically start reflecting about methods, processes, etc., about your taken for granted knowledge... I have changed my impression of how to do things, and also on how I perceive and see things and how I work. This is what I mean by having changed and developed as a person.”
Hence, it was not only their professional life which had gained from their learning journey and education, their personal development had also benefitted.

**How can we teach creativity?**

In this section, I will analyse the learning journey of the LAICS programme based on an interview with the present study leader and on my observations and experiences as a LAICS faculty member. Furthermore, I will include the participants’ perceptions of creativity.

The study leader explained that when they were creating LAICS as a degree programme, they had to ‘walk the talk’ and use creative methods for developing the programme. Also, they presented the preliminary programme to potential organizations and listened to their needs in terms of creative employees and innovative leaders. Regarding the teaching methods, it was a high priority that there should be a lot of process work and reflectivity, as well as an experimental and explorative approach. They wanted to establish a learning culture right from the beginning. There should be no PowerPoints, no lectures, but lectureettes of 20 minutes. The programme should be front edge and on the edge. It was important to establish a practice sphere where students could explore and experience leadership and innovation in situations that involved complexity and ambiguity. After the very first seminar, they realised that some adjustment was necessary. Hence, PowerPoints were permitted, also lectures, but not all the time. The occasional changes were based on the students’ needs, because they wanted more input and less process work as well as a more structured, less open and explorative teaching style. Adjustments are still being made, but it is important that it should not be a formal structure determining the teaching methods. Instead the type of teaching depends on the topic of each seminar and on the faculty. Members of the faculty are both university professors and consultants. Some teachers are good at process work, while others perform better with more traditional teaching methods. When it comes to the type of assessment, the aims of the LAICS development team were quite different from the present outcome. As the study leader explains, they had to conform with the rules and regulations of the university and so far there has not been time or energy for challenging the rules or experimenting with innovative assessment.

From the outset, the use of arts-based approaches was an important tenet of the programme. Arts-based approaches are a useful means for
accessing an inner focus which involves including knowledge derived from experience and reflection (Darsø, 2008). These approaches and techniques allow tacit knowledge to surface without violating it with words. They include theatre rehearsal and using live music for listening and improvisation. Some of the arts-based tools and methods are used by the ‘normal’ faculty, other are presented by various artists, actors and the like who are included as faculty members. The teaching methods were selected in order to make teaching creative; an important element is the use of questions. ‘Powerful questions’ are those which can stimulate curiosity and reflection, they generate energy and are seen as key to creativity and innovation. Questions are a well-known tool for generating creativity (Almeida, 2010; Lange, 2010). Another important element in the learning culture, and in making space for creativity during seminars, is the use of gardeners mentioned previously. To sum up how teaching is made creative in the context of the LAICS programme, it is useful to look at the study leader’s description of the LAICS learning design:

1. Creating a learning culture right from the beginning
2. Every theory, model or method should be related to own practice
3. Seminars should be designed to be engaging and to involve the participants
4. Learning design must include giving the participants first-hand experience, followed by reflection
5. Learning design should include exploration and improvisation
6. Learning design should involve both intellect and feelings – and the body, when possible
7. Seminars must be designed to include personal reflection, conversations in small and larger groups, as well as plenum conversations and dialogue
8. Seminars must include space for reflection and inner dialogue through work with individual learning journals (Darsø, 2008:6).

This learning design remains the same, even though the seminars are developed and refined regularly. Hence, the learning journey of LAICS is not finished. An important lesson for us as faculty is how we cope with ambiguity and complexity. We experienced this in the Spring of 2010 where we were due to travel to Slovenia on the second module just when the ash plume from Icelandic volcano interfered with air traffic in Europe. With two days notice we had to find an alternative location not involving too much travel and change the
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programme accordingly – not knowing whether we would be allowed to fly to Slovenia or not. We ended up staying in Copenhagen and had an even better seminar than the one planned. This led us to rethink the purpose of travelling to Slovenia for that particular seminar and change location for future seminars. Hence, the ash plume became a creative constraint, one which led to learning for all of us.

What did the participants learn about creativity during their learning journeys and how did they perceive creativity after finishing their masters degree? The interviewees had different, but not contrasting conceptualisations of creativity. Some of the views were:

“Creativity is to see things in new ways, to think new both within the existing framework and outside the framework.”

“Creativity has to do with being open, not knowing what emerges. This is how you work as an artist. You cannot imagine what will happen if you add a certain colour. If it doesn’t work, well then you know... Creativity is both imagining and trying in practice. And sometimes you cannot even imagine, but just have to start with practice, with trying.”

Not only did the interviewees talk about creativity, they had also embraced some of the elements of creativity. One clear example was their approach to failure. This concept was not mentioned by any of the interviewees. Their approach was that there is no such thing as a mistake; instead it may be a detour on your learning journey. And in line with this, there is an understanding among the interviewees that the same teaching does not constitute the same learning for all of them. We develop an understanding that creativity is social and collaborative. This understanding is also related to complexity theory. Within complexity theory connected to education and management, human systems are seen as comparable to nature which is rarely linear or predictable (Tosey, 2006).

Based on my observations and my experiences as a teacher and not the least as a supervisor, I find explaining my own creative research process is very rewarding for the students. Usually, journal articles and academic books portray the process as a rational, linear sequence of events that led to the outcome presented in the book – very much in line with some critical thinking. It is rare to see a description of the detours, coincidences, and serendipities which most researchers acknowledge as part of the process. Hence, the creative thinking part is
omitted from the reporting of research. Therefore, I tell my students about the detours and serendipities I experience and encourage them also to be reflective and ‘honest’ about their learning journey in their written assignments and in their oral assessments. In this way, I encourage a more emergent approach to knowledge generation. An approach, which is in line with the spirit of the degree programme while adhering to the format of the assessment.

Because the LAICS teaching methods are alternative and have a strong impact on the students’ learning, it is interesting to notice how learning is assessed at LAICS. Generally, assessment has a strong influence on learning (Biggs, 2003). Therefore, I find it important to regard assessment as a central part of teaching and learning itself and not only as an act of measurement after learning has occurred. Assessment can help students to focus on the most important concepts and practices that they are studying. As explained by Boud:

“The more we can engage students in assessment activities meaningful to them and which contribute to their learning, the more satisfying will be their experience of higher education” (Boud, 2006:xix).

However, assessment can also have a harmful effect on creativity (Belluigi, 2010). The question is whether the assessment methods are able to capture the nature and the range of learning outcomes sought from the LAICS seminars. All interviewees concur that the assessment method is very traditional. They found that there was little assessment of the creative competencies they had gained. It seems that it is difficult to reconcile creativity and criticality in the current assessment process. Here criticality is rewarded.

The call for creativity in higher education is often related to the idea that we live in an increasingly complex world with rapid changes. The LAICS programme attempts to answer this call by using a learning approach where the students learn to live with ambiguity and to navigate in complex systems. To sum up, the main tools for this are: to establish a practice sphere with emphasis on practice and experiments thereby creating room for exploration and experiencing; to apply arts-based approaches, which allow us to access tacit knowledge and give an inner focus; to build a learning culture that emphasises the importance of relations, trust, and curiosity; to use a variety of teaching methods to allow for diversity; and to prioritise time for reflection. These are all tools that promote creativity one way
Creativity and criticality reconsidered
Is there a paradox or not between creative thinking and critical thinking? After studying some of the extensive literature on creativity and criticality and after analysing my empirical material, my answer is no. There is no paradox between the two ways of thinking. Sometimes they are intertwined, sometimes they complement each other and on a few occasions they can be futile for one another (Bailin, 1987). There are phases in a creative process where critical thinking can be detrimental, for instance in the middle of a divergent phase where focus is on quantity of ideas and not quality. In a convergent phase focus is on narrowing down the number of ideas and therefore quality is of importance and criticality becomes a tool – even in a creative process (Darsø, 2001). Hence, we need both creativity and criticality in academia and I agree with Bailin that:

“the critical and the creative are inextricably linked and are joint aspects of effective learning” (1987:27).

Or as Tosey explains:

“dreaming, serendipity and the like can be complemented, refined and honed, but not replaced, by critical rationality” (2006:37).

If we as higher education teachers pay attention to our teaching methods, we can enhance the students’ learning and enhance both their creativity and criticality.

This being said, my learning journey studying this question has also led me to the conclusion that there is an apparent paradox between criticality and creativity because in academia we do not pay sufficient attention to the creative processes which are part of the research process. As shown by Kleinman (2008), criticality is not part of the daily discourse. We do not talk about our creative processes, nor do we report them in our publications. Usually peer reviewed articles and the like describe very linear, rational knowledge processes. However, when asking researchers how their new knowledge and research came into being, the road has usually been far from linear. Serendipity is a well known friend. Yet, we often talk about academic work using a vocabulary that seems more aligned with critical thinking than creative
thinking. Hence, the cultural norms in academia are not cultivating creativity. Moreover, the academic rules and structures are hampering creativity. As Bleakley explains:

“Accidental by-products are commonly reported in science, arts and humanities research, but this type of creativity may be neglected in higher education in an era of obsessively learning outcomes and curriculum descriptors. Serendipity has perhaps become the unconscious or tacit dimension to such limiting pedagogical frameworks” (2004: 472-73).

Consequently, we see an apparent paradox between criticality and creativity. With criticality being a clear aim of higher education, it becomes difficult to teach creativity and teach creatively. While creativity can be inhibited by criticality, rules and structures are the major impediment to creative teaching in academia. As Jackson explains:

“Creativity is inhibited by predictive outcome-based course designs, which set out what students will be expected to have learned with no room for unanticipated or student-determined outcomes” (2006: 4).

Jackson further remarks that assessment criteria, which limit the students’ possible ways of answering, are a major inhibitor both for students’ and for teachers’ creativity. This corresponds with the findings from LAICS in which assessment mainly is concerned with criticality.

Having acknowledged that creativity is constrained by academic norms, rules, and standards, let us now turn to how we can teach creativity and teach creatively. While creative thinking can be taught without teaching creatively, there is a conviction among LAICS faculty that it is better to practice what you preach and that creative teaching will enhance creative learning outcomes even if the subject taught is not creativity per se. At LAICS, creative teaching methods are used for teaching both innovation and leadership – there is no difference in the choice of teaching methods for the two subjects. By using an exploratory, practice-based approach and being open towards the needs and wants of the group, the LAICS faculty members facilitate the students’ learning rather than teaching them. This leads to the idea that instead of teaching creativity per se we should seek to create the best conditions for learning creativity by teaching creatively.
Teaching creatively also has a bearing on what we teach and on our pedagogies. As mentioned, the pedagogies at LAICS are inspired by Dewey’s and Schön’s practice-oriented approaches emphasising experiential and experimental learning. One of the interviewees explained how practice relates to creativity and criticality in the teaching at LAICS:

“... creativity is not only about being imaginative but also about practice. Practice is the link between creativity and criticality, between the imaginative and the rational. When you have tried something in practice, you use your criticality to judge what you have tried in practice. If you only are critical, you judge the idea without even trying it. Creativity is both imagining and trying in practice”.

This approach is visualised in figure 1.

Following this view of creativity, teaching creatively also means making space for practice or creating a ‘practice sphere’ to use the words of the LAICS study leader. By including an element of practice, of unfolding new ideas, a link is established to critical thinking – in this case by judging if the new piece of work was good or bad. The idea can be a painting needing further effort or an idea for research. Hence, if we want to teach creatively, we can do so by introducing elements of practice where creativity can be performed. And in the practice element, there can be interplay between creativity and criticality similarly to what Smith-Bingham (2006:16) has labelled “the cultivation of creativity in the context of critical practice”. Hence, by including practice we use criticality to analyse if we are satisfied with the new world, we have invented. This is one of the reasons why the practice element is so important at the LAICS programme.

Concluding remarks
In this chapter, I set out to analyse how creativity is and can be taught in academia which is preoccupied with teaching criticality. I found that creative thinking and critical thinking are not at odds with each other. Hence critical thinking and a focus on criticality is not necessarily hampering creative thinking. But there are some constraints to teaching creativity and especially to creative teaching. These are related to the academic norms and culture, to the rule and structures found in academia. Some of these are imposed from the Government and others are not. As mentioned, we are not used to discussing creativity in academia, while criticality has a more prominent space. However, this
does not mean that creativity has no space, on the contrary: many researchers acknowledge that research is a creation of new knowledge and therefore creative by nature. But when it comes to teaching, creativity has only little space outside the arts. This is unfortunate, as society needs students with creative thinking skills. These can be learned either through specific courses teaching creativity or through creative teaching methods. Many proponents of critical thinking advocate an integration of critical thinking into the way the disciplines are taught; likewise I would advocate using creative teaching methods rather than designing separate courses in creativity. Hence, teaching creativity should be done through creative teaching.

Bibliography

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