

Can Creativity be Taught?

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Abstract

The title question and two subsequent questions are considered in the context of rational creativity. A-rational creativity is not considered.

Q. Can creativity be taught?

A. It depends on what is meant by 'creativity' and 'taught' in what context.

Q1. Is teaching either creativity or critical thinking inimical to the practice of the other?

A1. Not necessarily, each is required for the success of the other and both are required for successful living.

Q2. Are Australian schools and universities a good place to learn critical thinking and creativity?

A2. Yes, teachers teach with sensitivity to the actual needs of students and No, accountability standards if applied effectively through testing and ranking inhibit the practice and reward of critical thinking and creativity in the classroom.

Keywords: creativity, taught, task/achievement

Introduction

Some time ago, Meno asked a similar question

Can you tell me, Socrates, whether virtue is acquired by teaching or by practice; or if neither by teaching nor practice, then whether it comes to man by nature, or in what other way?

To which Socrates replied (in part)

I literally do not know what virtue is, and much less whether it is acquired by teaching or not.

As one in a similar position to Socrates but with an ambition to become more like Gorgias, to answer

in a grand and bold style which becomes those who know

I seek to address this question to see if and how the current emphasis on creativity in schools and universities may be justified.

Creativity

Many courses are now designed to teach creativity in one way or another and The University of Warwick has an MA in Creative and Media Enterprises in which students learn how to manage creativity. Yet it is claimed

The truly creative is always that which cannot be taught. Yet creativity cannot come from the untaught.... The elements of a creative solution can be taught, but the creativity itself must be self-discovered and self-disciplined.¹ Torrance (1988, p. 58)

This view may rely on a definition of 'creativity' as

The use of imagination or original ideas to create something.
(<https://en.oxforddictionaries.com/definition/creativity>)

where 'imagination' is taken to be beyond institutional constraint or control, free from empirical limitations. If creativity, like imagination, is free of control, organisation and institutions then teaching it seems impossible. If creativity is not like imagination, then how best to conceive of it such that it can be taught?

In trying to come to grips with a workable and useful account of 'creativity', I first take it that it refers to the creation of something from something else by means of a recognisable process. Only God creates alone, creates something from nothing, in an unknowable way and, is the sole arbiter of whether it is good. For the rest of us, creation is a social activity within traditions so 'creativity' may be defined

as purposive reassembling of parts into new wholes.
(Felicity Haynes *pers. comm.* 2016)

To be able to nominate something as a part or a whole requires shared understandings within a framework. Creativity is therefore something done by participants in a human tradition in ways recognisable to other participants as being relevant and somehow worthy².

"Creative" is the term that once "belonged" to the realm of artists and is now a common term of generalized meaning to do with being innovative. (Grierson, E. 2016, p. 1299)

While novelty seems somehow tied up with creativity it would appear that a particular kind of newness is required. When bottling Coca Cola in my summer job as a university student, I helped to turn out lots of new Coca Cola in old bottles. Neither I, nor any reasonable observer, would have considered those

¹ My efforts to assess creativity have thus far been limited largely to the rational-thinking view of creativity. Little attention has been given to assessment of the creativity that (is) ... outside the province of reason. (Torrance 1988) This paper shares the same limitation.

² It may be that the other participants have a more significant role. Duchamp (1957) claimed The creative act is not performed by the artist alone; the spectator brings the work in contact with the external world by deciphering and interpreting its inner qualifications and thus adds his contribution to the creative act.

actions creative even after conceding that a new bottle of Coke had been assembled from various parts. The actions would not have been any more creative when new bottles were used³. Given that filled bottles had to be loaded by hand at a predetermined speed into crates (or else they fell to the floor with spectacular and embarrassing consequences), would my use of a new technique for grasping and releasing the bottles more efficiently be creative? If the technique was new to me but merely the one used by all the experienced hands, would that be creativity or just learning how to do it right? (Kotzee, B. 2016) Would it be creative if no one at that factory had ever used that technique but others elsewhere had done so and was established practice there? Or does the newness of the act need to be such that it is patentable before it counts as creativity?

Perhaps bottling, partly by hand (not fully automated as is now the practice), is not something in which either creativity or critical thinking is particularly evident (particularly when checking quality of cleaned bottles on the Inspection Light at 3am). But, what of those practices in which creativity may be particularly prized? Are the actors/musicians putting on the 573rd performance of a play/score any more creative than that bottler or are they only new words/actions in someone else's old play/concert? Is new paint on a new canvas applied in the painter's established style somehow more creative than filling new bottles? Certainly these are much more complicated tasks requiring a very high level of specialized skill, but what is it about them that might justify calling them creative arts?

Putting aside such things as performative acts, descriptions and uncontrolled responses to physical stimuli (cf Hoffnung, 1958) as being outside the range of human activity related to rational thinking in the form of creativity, two types of activity are worth brief consideration in this regard. Problem solving within the context of skilled practice (research and moral deliberation are two forms of this) and activity designed to be appreciated by an audience, are two types of activity in which critical thinking and/or creativity play an important part.

While the two types of activity have very different purposes they share a considerable amount in common. They are conducted within traditions that have shared concepts, techniques, standards, exemplars, heroes, etc. Participants have shared core understandings, judgements and rules for dealing with new situations. They also have a range of negotiable understandings, judgements and rules that are not necessarily shared by all participants and are subject to variable application in different circumstances. Skilled performance is the result of the appropriate application of these features of the tradition to a new circumstance. Critical thinking is necessary to identify what counts as appropriate standard application but, on occasion, it may not be sufficient. Expertise, style and/or flair may be the outcome of creativity in the application of those standard features of the tradition.

De Bono's ants illustrate a circumstance in which, as Lakatos (1970) indicated, call for something other than the standard application of the core elements of a tradition. If a group of ants have only one rule "Proceed randomly

³ Of course if innovation refers to design and not object then it is all old wine in old bottles (I also bottled wine by hand).

in search of food, except when an ant scent trail is detected then that trail is to be followed". This rule results in a line of ants and all obtain food when the lead ant does. However, if the lead ant crosses the group's trail they will go around in circles until they all die. This hypothetical example may seem unrelated to real examples of rule following behaviour. Consider, however, an example much beloved of early behaviourist psychologists "On command, disassemble and reassemble a machine gun." Much misconception and mischief has been wrought by a limited focus on the behavioural objective (aka outcome statement) "Can disassemble and reassemble a machine gun" which seems to resemble the rule following of the ants above. No critical thinking or creativity is required (may even be seen to be counter-productive, subversive, and/or deserving of punishment). As no one does, or should, go around disassembling and reassembling a machine gun for no purpose or reason, the words "on command" have particular significance. The most obvious significance is that it gives the subsequent behaviour purpose, authorisation and a starting point. Even if the participants are not conscious of it at the time and may never have had a clear understanding at any time, there is a requirement in many military organisations that only a lawful command is to be obeyed. Thus on any occasion when a command is given, it is in principle open to scrutiny and the application of critical thinking to ascertain whether it is lawful or not.

When is a problem such that it challenges the core of the tradition? Creativity in such a situation lies not in routine application of the tradition but in seeing the challenge and being able to deal with it in such a way as to achieve the purposes of the tradition.⁴ The main point of these examples is not to highlight rare cataclysmic failure of rule application (the ants) but the need to be aware that every application of a rule is potentially such a case. Awareness of this and openness to challenge may avoid the "antlike" application of critical thinking rules.

A practitioner is creative insofar as they produce something new that is appreciated by discerning members of the tradition as being a worthy addition to the tradition. Being creative may involve following the existing accepted rules in a particularly distinguished manner; bending or adapting one or more of the non-core rules; or challenging part of the very core of the tradition to reshape it in the face of an identified circumstance. Marcel Duchamp, associated with Cubism, Dada, Surrealism and Conceptual Art, is claimed to have said "he stayed within the bounds of art or risked being put in an insane asylum".

Could it be that the creative arts are not uniquely or peculiarly creative but differ from other human traditions by sharing a predominant purpose? Problem solving traditions and appreciative traditions each engage in critical thinking and creativity. Where they differ significantly is in their purposes. The *raison d'être* of an appreciative tradition is to produce something that is appreciated by a discerning audience⁵. Other traditions also have a similar

⁴ As creativity in this situation is not qualitatively different from more mundane circumstances, I reject Sternberg (1999) concept of Big C creativity. Likewise, revolutionary science, epoch changing art and game changing cricket do not use Big CT critical thinking.

⁵ Always allowing that many audiences see as well as hear what is produced. Some may feel the product but, depending upon whether cooking is a creative art, few regard taste or smell as of central importance. Could it be that being an appreciative audience 'seeing as' involves more than passive pattern recognition? If so, are there circumstances in which some of the active element of

purpose, consider such examples as scientific or historical research and competitive sport, but it is not their reason for being.

The discerning audience is differentiated to the extent that gatekeepers, other producers and consumers may have some difference in the sets of criteria upon which they base their appreciation. The consumers may need to pay for the privilege in order to enable the others and the tradition to survive. To point this out is not thereby to endorse some current policy uses of 'creativity' in the context of 'creative and cultural industries'⁶ where there is a danger that instrumentalising the term may tend to overwhelm aesthetic sensibilities.

It is problematic as to the extent that creativity *per se* is one of the significant criteria any one of the members of the audience use in making their appreciative judgements. Would it make a difference to the appreciative judgement if the product were the result of brilliant creativity or a happy, replicable accident? Francis Bacon said

I always think of myself not so much as a painter but as a medium for accident and chance." (Tlili, 2016, p. 450)

but accident and chance are unlikely to be creative or inventive without a well-prepared mind⁷. Random experimentation is a very expensive way to attempt to be creative, avoids intention, and requires some basis upon which to decide whether the product has worth. What difference would it make to the appreciative judgement of a creative work if the audience did not know how it was produced? Perhaps the circumstances of those making an appreciative judgement are more important than the creativity involved in the production. For a signature on a urinal to be appreciated as creative art may have more to do with the location of those making the judgement (in an expensive avante-garde gallery rather than in a public toilet), the reputation of the artist, the power of the patron, the influence of the PR campaign, the attitude of significant critics, etc rather than the actual (as opposed to reconstructed) thought processes involved in production. A consequence of the foregoing is that emphasis on 'creativity' and 'innovation' is misplaced and it would be better to focus on 'better'.

appreciation may usefully described as creativity? Further, could those creative elements be usefully regarded as essential to the appreciation and, therefore, existence of creative arts? In what ways are the creative responses of the appreciative audience of significance to the creativity of others than those in the performing arts?

⁶ The creative industries sector, writ large, includes film, television and video production, post-production and distribution, photography, fashion, creative writing, literature and publishing, computer gaming, information innovation systems, creative advertising and marketing, architecture, design and technologies, as well as visual arts, media arts, craft, music, dance and drama. (Grierson, E. 2016, p. 1300)

Identifying the creative in the film industry, where most of the thousands of participants have no direct hand in the finished product, and distinguishing it from the creative starving artist in the garret is a task not undertaken here.

⁷ The inventor was, however, encouraged in his efforts by the reflection that that which is hidden and unknown, and cannot be discovered by scientific research, will most likely be discovered by accident, if at all, by the man who applies himself most perseveringly to the subject, and is most observing of everything relating thereto." (C. Goodyear, *Gum Elastic*, 1855, p. 101 quoted in Jewkes, J. et al, 1958, pp. 49-50)

ANSWER Aa. It depends on whether 'creativity' is conceived as something unconstrained like imagination, limited to some traditions such as those producing something for an appreciative audience, limited to revolutionary innovation in a tradition, common to all rational activity, or some other version.

Critical Thinking

'Creativity' and 'critical thinking' are, in a sense, brand names given to aspects of thinking that were popularised in the US in the 1960s. Tests for critical thinking (eg Cornell Critical Thinking Test) and creativity (eg Torrance Creativity Test) have been available since the 1960s. Thinking about critical thinking, since that time, has been placed more emphasis on dispositions rather than a sole focus on logic (Ennis, 2011).⁸

Critical thinking and creativity do not exhaust the various forms of thought available to us.

- Critical thinking to justify argument, both empirical and normative;
- creative imagination to generate alternate possibilities;
- causal thinking to explain, predict, plan events;
- historical memory to ground judgement within particular traditions;
- philosophical reasoning to clarify and elaborate confused or problematic notions within particular traditions;
- aesthetic appreciation to add beauty to the truth and good of life.

All these utilize the descriptive and performative powers (Austin, 1962) of the language within the traditions.

Insofar as critical thinking and creativity are forms of thinking, it is well to remember that we usually do not think before we speak or act, at least not consciously so (you have just read/heard this sentence – did you think about reading it before you did that?). We usually do not consciously think about what we are about to do, make a judgement and act on it. So neither critical thinking nor creativity are forms of conscious thinking engaged in prior to most successful speech or action. Some may seek to make a special case definitive of a type of thought and action

- only a dilemma resolved by logical, preferably deductive, thought counts as a moral act
- only a crucial empirical test counts as doing science, or
- only a radically new way of painting constitutes creative art.

However this effectively relegates most of our moral, scientific and artistic life to a relatively unimportant secondary use. Rather, it is our moral, scientific, artistic and other traditions that are important and the features selected by some as definitive are instead distinctive means by which the traditions deal with intractable problems and, as a result, continue effectively and evolve. What is

⁸ the application of logic to the problems we meet in ordinary life takes more than skill in logical reasoning to handle them – indeed, it takes imagination, sensitivity, persistence, concentration, the ability to obtain and connect such relevant information. But without some skill in logic, the task is hopeless. (Beardsley 1975, p.4/5)
... reasoning is a constructive and creative activity that leads us to new knowledge (Scriven, 1976 p. 35)

important is that practitioners in a tradition engage in reflective practice, ie. in suitable situations, practitioners reflect appropriately on alternative courses of action before acting, evaluate actions after the event, or on other aspects of the tradition. Creativity and critical thinking are part of what it is to engage in reflective practice.

What we say and do is our response to a situation on the basis of who we are. But we are not only aware of the situation, we are also aware of who we are – we are self conscious. We can reflect on what we understand of ourselves and our situations and can undertake modification of either or both. Others may help in this by critiquing our responses and supporting or showing disapproval of them. They may further assist by indicating how our responses may be better supported by thought or evidence. They may even indicate how we may better understand a situation as viewed from within the framework of purposes, concepts, values, standards, procedures and understandings of an evolving tradition. Neither critical thinking nor creativity stand apart from the traditions in which they operate. These operations of the evolving tradition within which creativity and critical thinking are located are central to any attribution of creativity or critical thinking to a thought process of an individual or group. The meaning of these terms lies in agreement in judgment within the relevant tradition. As Fordham has noted

A tradition, as MacIntyre framed it, is not something inert and unchanging – that would be called dogma – but rather “a viable tradition is one which holds together conflicting social, political and even metaphysical claims in a creative way”
(MacIntyre, 1979, p. xx) Fordham (2017, p. 638)

ANSWER A1. For a participant to succeed in a tradition and for a tradition to survive and evolve requires both critical thinking AND creativity and neither are necessarily inimical to the practice of the other.

Teaching

Teaching critical thinking, understood as part of what it is to initiate someone into a tradition, requires an element of and encouragement of creativity. Thus teaching critical thinking is not inimical to creativity. But the question remains: can creativity be taught?

‘Teach’ has both a task and an achievement sense (Marshall, 2009). In undertaking the task, X taught creativity to the class. In the achievement sense, X taught the class to be creative.

‘Creativity’ has a similar ambiguity. A person may be creative, in that they have the required features that warrant the application of that term. As Torrance (above) noted, a creative person may not create successfully on a particular occasion. However there is nothing special or mysterious about creativity in this regard, as an athletics coach does not always see their athlete win a particular race.

ANSWER Ab. So the task of teaching creativity in a tradition, as a suite of skills, understandings, perceptions, values, dispositions, etc, to a class is both

possible and desirable even although in particular circumstances the attempt to be creative is unsuccessful, unpredictable or unexplainable.

Can creativity be taught in Australian schools?

Can creativity be 'captured' such that

The top three intellectual behaviours: Analysis, evaluation, and creating; are considered higher levels of *thinking* and help us to demonstrate our *critical thinking*.

(<https://Student.unsw.edu.au>Student>Support>Academic>)

The University of New South Wales provides a Critical and Creative Thinking Program using critical and creative thinking to develop reflective practice as we change our work, learning and lives. This approach seems not to capture creativity as part of critical thinking but to see each as being different and contributing in their own way to reflective practice. This gives rise to QUESTION A2 Are Australian schools and universities a good place to learn critical thinking and creativity?

Course content and tests were devised as a basis for specific teaching of these aspects in schools and universities. Teaching these aspects as part of the rest of the school and university curriculum in many places became officially recognised and mandated as learning outcomes. For schools and universities to teach critical thinking and creativity involves more than specific teaching, it also requires policies and activities to exemplify, encourage, identify, and reward these aspects of intellectual life to develop student's reflective practice. For the teaching of critical thinking and creativity to be successful requires society's traditions in general and the workplace in particular to recognise and reward this thinking in practice, this as Torrance (above) in effect said, "Can lead a horse to water ...".

Higher level critical thinking or creativity cannot be taught in schools in a homogenous, closed, authoritarian society, whether it be an association, tradition, or a nation state. Such a society neither needs nor desires individuals' critical thinking and creativity to reach judgements about the society or produce something new. Judgements and new directions are the result of group processes for the individual to accept and follow. Individual judgements and innovations are potential sources of destruction of the society. Critical thinking and creativity related to an individual's private and immediate life are necessary in such a society and can be embedded in learning the established ways of doing accepted practice. However, critical thinking and creativity are not likely to be reified in curriculum aims or outcome statements nor taught specifically.

Individual agency in an open, diverse and democratic society, through higher-level judgements and innovation based on critical thinking and creativity, are necessary both to sustain and change the society. Competition between difference is both the site of decision making and the wellspring of evolutionary change in this society, so toleration of difference is essential. As in a closed society, critical thinking and creativity related to an individual's private and related life are necessary. The traditions of an open society provide exemplars of such thinking and the rewards in their distinctive contexts. Critical thinking and

creativity are embedded in learning the established ways of doing accepted practice that include challenging them to improve the practice. In recent times some open societies have reified critical thinking and creativity in curriculum aims and/or outcome statements and taught them specifically. However,

In the current culture of regulation in higher education and, in turn, the history discipline, it is timely to problematize discipline standards in relation to student agency and creativity....
Discipline standards (lessen) emphasis on creativity, agency, and individual opportunities for the demonstration of the historical imagination at work. (Clark, J. and Nye, A. 2017, p. 656)

Such an account applies equally though differently at primary and secondary school levels. The current administrative system in Australia and elsewhere removes the supporting context needed to make specific teaching of critical thinking and creativity as effective as it could be. Haynes, F. (2007) has identified such schools as 'toxic' institutions⁹. Accountability standards truncate what is supposed to be taught to the readily specifiable and predictable. Standardised testing and ranking ensure conformity. While this makes schools and universities more manageable, it reduces critical thinking and creativity in teachers and students and their capacity to engage in reflective practice¹⁰ in an open, democratic society. The problem identified by Marshall (2009) is the neo-liberal shift in the use of 'teach' from a task sense to an achievement sense.

Summary

Question: Can creativity be taught?

Answer: It depends on what is meant by 'creativity' and 'taught' in what context.

Subsequent question 1: Is teaching either creativity or critical thinking inimical to the practice of the other?

Answer: Not necessarily, each is required for the success of the other and both are required for successful living.

Subsequent question 2: Are Australian schools and universities a good place to learn critical thinking and creativity?

Answer: Yes, teachers teach with sensitivity to the actual needs of students and No, accountability standards if applied effectively through testing and ranking inhibit the practice and reward of critical thinking and creativity in the classroom.

⁹ The toxicity consists of letting facts and content become concretised ... without enabling the disequilibrium of uncertainty, surprise, joy, push systems into a higher, or different level of postconventional thinking. It is a refusal to allow children to adjust their schemata for themselves. (Haynes, 2007, p. 10)

¹⁰ Current moves in Australia to replace reflective practice with the key notions of teaching as a "clinical practice". ... [that] require extensive professional development for teachers who have not had clinical training and want to practice clinically within school settings, especially in psychometric testing procedures (Bowles et al, 2016. pp. 21-2) are indicative of schools as toxic institutions.

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