

Learning for an unknown future

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Introduction

What is it to learn for an unknown future? It might be said that the future has always been unknown but our opening question surely takes on a new pedagogical challenge if not urgency in the contemporary age. Indeed, it could be said that our opening question has *never* been generally acknowledged to be a significant motivating curricular and pedagogical question in higher education. Be all this as it may, the question (What is it to learn for an unknown future?) surely deserves more attention than it has so far received. After all, if the future is unknown, what kind of learning is appropriate *for* it?

The preposition ‘for’ carries weight here. The preposition implies an education in which—in our presenting case in point—a sense of an unknown future is probably evidently present; or, at least, serves as a major organizing principle in the design of the curriculum *and* in the enacting of the pedagogy. If future-as-unknown was missing either from the curriculum or from the pedagogy in some way not far from the surface, we could hardly say that we were in the presence of a learning ‘for’ an unknown future.

Generic skills may seem to offer the basis of just such a learning for an unknown future. Generic skills, by definition, are those that surely hold across manifold situations, even unknown ones. I want to suggest, however, that the idea of skills, even generic skills, is a cul-de-sac. In contrast, the way forward lies in construing and enacting a pedagogy for human being. In other words, learning for an unknown future has to be a learning understood neither in terms of knowledge or skills but of human qualities and dispositions. Learning for an unknown future calls, in short, for an ontological turn.

A logical conundrum

If the future is unknown, what would it mean to learn for it? There is the makings of a logical conundrum here. The unknown cannot be anticipated so how can a learning take place that is adequate to the unknown, to the unanticipated? Whatever else it

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points to, 'learning' implies a change in understanding and a change in one's relationship to the world; but an unknown world places questions against appropriate changes in understanding and in one's relationship to a world that is unknown.

It may be responded, as we noted in our introduction, that there is nothing new in any of this: the future has always been uncertain. Learning has always, then, been a matter of learning for an unknown world.

There are a number of rejoinders to this response, so as to substantiate a claim in favour of learning for an unknown future. In the first place, the unknown-ness may be of a kind that we have not seen before due to the rapidity in which a new world replaces the old: the pace of change. In the second place, it may be that the sense of an unknown world was never as vivid as it may now be. As a result, a sense of an unknown world never entered into curricula and pedagogical decision-making, *even if it could and should have done so*. Third, it may be that the kind of world that we are now facing is—as it were—qualitatively different from former worlds. Former periods of history may, for instance, have seen quite profound changes taking place but, it could be argued, they were changes in the infrastructure of life; they were changes to ways of engaging with the environment (the agrarian and industrial revolutions), or were changes in social institutions (the rise of democracy and personal freedom). Now, what we are witnessing is a new kind of world order in which the changes are characteristically internal. They are primarily to do with how individuals understand themselves, with their sense of identity (or lack of it), with their *being* in the world; this is a world order which is characterized by ontological dispositions.

There is a fourth kind of response to the suggestion that the world has always been one of change and uncertainty, and that is to rebut the suggestion head-on. The counter claim here would be that the world has by no means always been one that has been saturated by change and uncertainty. On the contrary, it could be argued that, seen from an anthropological perspective, what characterized society until quite recently was precisely a sense of order, of stability, of relentless predictability (cf. Gellner, 1991). For the primitive mind, the universe was largely unchanging and, too, man's place in the universe. One's ancestors and one's successors would experience largely the same world. A sense of change, particularly within the horizon of a single lifetime, is a relatively new phenomenon. I believe that there is validity in this argument but I want to set it aside, if only because it is the arguments that accede to a long-standing sense of change that are particularly interesting for our purposes here.

I want to suggest that the other three rejoinders to the comment that the world has always been uncertain each carry weight and that *all* are co-present features of the condition of our current age. Together, they make for a world that is nowadays often described in the literature as one of 'fluidity', as a 'liquid modernity' (Bauman, 2000) and as an age of 'fragility' (Stehr, 2001) or 'risk' (Beck, 1992). A number of associated terms, such as 'chaos', 'complexity' and 'fragmentation', are also often summoned in such a discourse. What is distinctive about the modern world, from this point of view, is not change per se but its character, its intensity, its felt impact.

In short, while we might concede that the world has always been changing (a point that has some dubiety), the challenges that the world now brings are of a new kind.

They are changes that bear in upon our sense of our own being; they are, in sum, ontological challenges.

We can see the point that I am making here by tracing a distinction between 'complexity' and 'supercomplexity'. Complexity speaks especially to a feature of systems, such that the interactions between their elements are unclear, uncertain and unpredictable. It is not just that situations may be captured in an image of intertwined spaghetti strands such that their patterns are indeterminable; it is that the spaghetti strands are so interwoven that any attempt to engage with any one strand will have repercussive and unforeseeable impacts on many, if not all, of the other strands. This is a relatively formal description of the situation that faces most individuals in professional life. One is faced with competing claims on one's attention, with an overload of entities, but any effort to satisfy one set of claims may lead to indeterminable effects elsewhere. Such a situation of systems complexity leads to real stress; not just an overload of entities that exhaust the resources available but a situation in which the very engagement with such a set of entities is liable to set off a chain of incalculable events.

Contrast that situation with what I would term 'supercomplexity' (Barnett, 2000). Amid complexity, as just described, at least one could be forgiven for believing that its challenges could, in principle, be dissolved. If only one had more time or more resources, to a large extent the complexities facing one would untangle. The students would be taught more effectively, the patients would be treated more quickly and even more humanely *and* the interests of the various stakeholders would be met. The challenges of complex systems, even if they could not be altogether unravelled, could be dissolved to a significant degree. The challenges of supercomplexity, in contrast, could never be resolved. They are the challenges that arise from the question: what is a university? Or: what is a teacher? Or: what is a doctor? The challenges of such questions could never be dissolved, at least not in ways similar to those of complexity. For such questions, in principle, yield a multiplication of answers and further questions. And some of those answers and further questions spring from perspectives, value positions and even ideologies that are mutually incompatible. To see universities and teachers as consumers of resources, or even as producers of resources on the one hand, and to see universities as sites of open, critical and even transformatory engagement are, in the end, incompatible positions, no matter what compromises and negotiations are sought.

Questions of the kind now being identified are characteristically open-textured questions that yield, in a global and pluralist world, interpretations that are not just different but which are incompatible; and there is no straightforward way of resolving those differences. And this, in itself, marks off supercomplexity from complexity. Supercomplexity produces a multiplication of incompatible differences of interpretation.

There is, however, a further point to be made in this context and it is that supercomplexity strikes home in a particularly penetrating way so far as the university is concerned. This point is that supercomplexity is intrinsic to the modern conception of the university (that is, it predates even postmodernity). It is, after all, part of the

understood character of the Western university that it should produce new ideas and these ideas, inevitably, will startle; they will offer frameworks of understanding that contrast with convention. In other words, the emergence of supercomplexity, as just described, is in part due to the university fulfilling its modern mission. That we have both multiple and competing interpretations of the world before us and that we have a sense that interpretations of the world are now infinite: all this, in part, is down to the Western university fulfilling the brief that has been set before it; in short, the project of critical enlightenment. Within this brief, it is part of the task of the university to add to the supercomplexity that is the contemporary world. In turn, we may judge, it is only right, only just, that the university should help to meet the bill that it has helped to land us all with. The university, in other words, should engage with the life-world challenges and, thereby, the pedagogical challenges, that arise from an age of supercomplexity.

'Learning for an unknown future': we now see that the task of construing such a learning—problematic as it was even at the outset of our inquiry—has now become doubly challenging. For learning has to cope with two forms of uncertainty. There is, first, the uncertainty that arises out of the sheer multiplication of entities in the world. It is a world of information overload, of multiplying performance indicators, and of unpredictability in the environmental response to any intervention. It is even an uncertainty that arises out of the sheer multiplication of pertinent evidence, of relevant knowledge. It is a world characterized by an 'ignorance explosion' (Lukasiewicz, 1994), even as the libraries of the Western universities groan under the weight of volumes and journals, not to mention the arrival of electronic forms of scholarly communication (cf. Ekman & Quandt, 1999). This is a world that is radically unknowable: even though we may make modest gains here and there, our ignorance expands in all kinds of directions.

Alongside this form of uncertainty, an uncertainty that arises from the complexity of the world and our knowledge of it, arises another form of uncertainty, as we have seen. It is a more personal form of uncertainty, the uncertainty that arises out of a personal sense that we never could hope satisfactorily even to describe the world, *let alone* act with assuredness in it. 'Anxiety', 'fragility', 'chaos': these are as much characterizations of an inner sense of a destabilized world. It is a destabilization that arises from a personal sense that we never can come into a stable relationship with the world. The descriptions of the world that are available to us—especially in a global and multicultural world—multiply and conflict with each other. This is the uncertainty that arises out of supercomplexity for supercomplexity is precisely that paradoxical condition in which our descriptions of the world are always contestable and in which we know that to be the case. Our hold on the world is now always fragile.

Learning for the unknown

We can now see, I suggest, that the educational tasks of learning for the unknown are themselves twofold. On the one hand, there is the educational task of preparing students for a complex world, for a world in which incomplete judgements or

decisions have to be made; incomplete either because of the press of time or because insufficient evidence is to hand fully to warrant any particular decision or because the outcomes are unpredictable. These possible forms of incompleteness are by no means mutually exclusive: incompleteness may be manifold, even in a single situation. On the other hand, there is the educational task of coming to a position where one can prosper in a situation of multiple interpretations. Whereas some minimal form of security is available in the first situation, here, in this second situation, no security is available at all; that is its essential character.

These educational tasks are surely quite different in character. Loosely, the first task speaks to what has recently become known as Mode 2 knowledge (Gibbons *et al.*, 1994; Nowotny *et al.*, 2001). Here, the task is that of problem-solving *in situ*. Such a form of knowledge production and knowledge use is creative and is bounded by uncertainty. Much as one may wish to fall back on formal knowledge having a universal aspiration (Mode 1 knowledge), in the end, one has to rely on one's capacity for seeing a way forward in a particular setting, with particular challenges bearing in upon one. This form of knowledge is necessarily creative, in part because of its particularity. There is always going to be an epistemological gap between the universal claims of Mode 1 knowledge and the challenges presented by a particular situation. Here, knowledge is always going to be incomplete; one can never know how things will turn out. What is called for, therefore, is a creative knowing *in situ*. And this is a form of knowing that calls for imagination. All this is implied, at least, in the idea of Mode 2 knowledge.

But, understood as problem-solving in the world, Mode 2 does not quite capture what is required, even with a heightened sense of its creative and imaginative qualities added in. For, as indicated earlier, a complex world is a world that is radically unknowable. The entities in the world and their dynamic relationships are such that we can never, as it were, freeze-frame the world. Its character must always elude our attempts to understand it; our knowledge of it, no matter how creative, how particular and how imaginative, must always fall short of it. The idea of problem-solving, so central to the idea of Mode 2 knowledge, is problematic because it implies that—with sufficient imagination, daring and creativity—a solution can be designed. But this is a world in which solutions cannot be designed, in the sense that a problem has been entirely satisfactorily met; there are always repercussions, unintended consequences and loose ends.

A Mode 3 knowledge, therefore, surely beckons, in which it is recognized that knowing the world is a matter of producing epistemological gaps. The very act of knowing—knowledge having become a process of active knowing—now produces epistemological gaps: our very epistemological interventions in turn disturb the world, so bringing a new world before us. No matter how creative and imaginative our knowledge designs, it always eludes our epistemological attempts to capture it. This is a Mode 3 knowing, therefore, which is a knowing-in-and-with-uncertainty. The knowing produces further uncertainty.

But it is still a form of knowing, a form of knowledge, albeit a knowledge which is itself a complex of personal, tacit, experiential and propositional knowledges (Eraut,

1994). The second task, in contrast, of coming to a position of some security amid multiple interpretations—of the kind opened up by a condition of supercomplexity—cannot be understood in a language of knowledge and knowing, however subtle that language becomes. For, amid supercomplexity, the world is not just radically unknowable but is now indescribable. Amid supercomplexity, we cannot even describe with any security the situations that face us. Indeed, we cannot even hold onto a language for describing the world. It is not just that, as in Mode 3 knowledge, the world recedes from us, even as we approach it. It is that we do not even know what the world is like sufficiently for us to start on our knowing activities.

Under these conditions of uncertainty, the *educational task is, in principle, not an epistemological task*; it is not one of knowledge or even knowing per se. It is not even one of action, of right and effective interventions in the world. For what is to count as a right or an effective intervention in the world? Amid supercomplexity, *the educational task is primarily an ontological task*. It is the task of enabling individuals to prosper amid supercomplexity, amid a situation in which there are no stable descriptions of the world, no concepts that can be seized upon with any assuredness, and no value systems that can claim one's allegiance with any unrivalled authority.

This is a curricular and pedagogical challenge that understands, therefore, that terms such as 'fragility', 'uncertainty' and 'instability' are as much ontological terms as they are epistemological terms. Accordingly, this learning for uncertainty is here a matter of learning to live with uncertainty. It is a form of learning that sets out not to dissolve anxiety—for it recognizes that that is not feasible—but that sets out to provide the human wherewithal to live with anxiety. To speak of anxiety here is not, it will be understood, to convey a pathological sense of psychological disturbance. Rather, what is meant is a generalized understanding that the world is forever beyond any clear uncontested understanding. The ice is perpetually slippery but this says nothing about the individuals on the ice; only about the conditions of epistemological insecurity in which they now find themselves. But this epistemological slipperiness generates, in turn, ontological destabilization. For if the world is radically unknowable then, by extension, 'I' am radically unknowable. Especially, for our concerns here, and as we saw earlier, what I am as a doctor, student or professor is itself unclear, contested, destabilized.

Much is made at present of the idea of risk; but, as with complexity, that concept is characteristically understood in somewhat narrow terms, that is in terms of *systems risk*, the risks that are attendant on the interactions of entities in complex systems (such as the effects of multiple drugs being used together; or, closer to our theme, of a new course of action either being taken or not being taken by a university's senior management team). Such systems risk is not to be downplayed but what our reflections here are pointing to is, in addition, an *ontological risk* that arises out of supercomplexity. If there are no stable descriptions of the world, then are no stable descriptions of 'me'. The 'I' is liable to be destabilized.

Under such conditions, a double educational task arises: first, bringing students to a sense that all descriptions of the world are contestable and, then, second, to a position of being able to prosper in such a world in which our categories even for

understanding the situations in which we are placed, including understanding ourselves, are themselves contested.

Pedagogical being

Our explorations to this point may have seemed unduly abstract but they point to a set of educational tasks that experienced and skilled teachers are confronting and fulfilling every day. It may be that academics, in their teaching roles, would not employ the language brought into view here but the tasks are surely being comprehended, albeit in different ways across the different disciplines. In a recent study (Barnett & Coate, 2004) of the ways in which the higher education curriculum is currently understood—in which the author was involved—a chemistry lecturer observed:

If we go back to Dearing, what struck me is that he is saying, really, that we've got to educate people who are going to earn a living. And they won't earn their living because they know how to produce a molecule in a particular way. That's not the way people earn their living these days.

This lecturer is surely saying, amongst other things, that neither knowledge nor skills, even high level knowledge and advanced technical skills, are sufficient to enable one to prosper in the contemporary world. Other forms of human being are required.

Here is a further quotation, this time from an interview with a history lecturer:

We have always tried very hard to assess oral presentations so if you looked at one of my third year students who has done a lot of history of art, they would be much more confident about speaking in public. They might not be terribly articulate but they are incredibly confident ... we are going to have to think less about specific course content and more about an approach to learning.

Again, in this quotation, we see a corresponding downgrading of the significance of both knowledge and skills. What is being underscored here is the idea of confidence—and the concept comes into view twice in this short quotation. Knowledge is here—in the form of history of art—and so too are skills; but both have limited parts to play in the conception of the educational task being opened to us. Indeed, skills are actually being downvalued for the students may 'not be terribly articulate'.

What is important for this lecturer is the students' sense of themselves and of their relationships with the world around them. The students have, as it were, an indwelling in themselves, a confidence in themselves, an investment in their own selves that enables them to go forth into a challenging world. They have the confidence to speak in public, even though—presumably—they are aware that those public offerings are very liable to be contested. They know, therefore, that those public utterances are contestable at every turn; but, yet, they have somehow acquired a confidence to have a go, to launch themselves forth in a world that will furnish responses that cannot be entirely anticipated.

Here is a final quotation, this one taken from an interview with a lecturer in nursing studies:

After five weeks, one day we turned up about half an hour later than them and they were doing exactly what they would have been doing with us. They were organizing a discussion and, of course, they were adults: they didn't need us for that. We became more the resource.

An implication that I want to draw from this quotation for our purposes here is that, in this reported situation, the participants were (again) exhibiting neither knowledge nor skills but a willingness to go on by themselves; and here, we may note, the going-on by themselves was collective in its nature. They were organizing a discussion: the participants were engaging together presumably with some commitment and even enthusiasm. They were intent on their own pedagogical voyage with a collective will. We may say, to put it more formally, that the participants here inhabited a form of pedagogical being that was authentic (to use a Heideggerian term). Their being lay in that which was 'present-at-hand' (Heidegger, 1962), namely themselves and the other participants, such that there was a jointly creative endeavour underway.

To summarize our observations on these three quotations, then, we may say that experienced teachers, without necessarily having or deploying a formal language to describe their own pedagogical achievements, are engaged in more than helping students to acquire knowledge and understanding and/or to acquire skills and capacities. These forms of pedagogical accomplishments, as realized in their students, are necessary but now are understood increasingly to be insufficient for a higher education in the contemporary world. To capture their pedagogical accomplishments fully requires an additional language. At one level, that language is caught in terms such as self-belief, self-confidence and self-motivation (as mirrored in our three examples). But even a language of that kind does not quite do justice to the pedagogical accomplishments in question. For these accomplishments point us, surely, to a language of self, of being, and of such terms as energy, authenticity and will.

Even if it is granted that a higher education curriculum should pay attention to the three moments as they are unfolding here—of understanding (knowledge), acting (skills) and being (self)—it may be asked: what has all this to do with learning for an unknown future? The answer is that matters of will, energy and being come into view in learning for an unknown future because the value of knowledge and skills recede in this milieu. If, in different ways (as the outcome of both complexity and supercomplexity), the world is radically unknowable, then knowledge and skills can no longer provide a platform for going on with any assuredness. The ice, as we have observed, is thin and perpetually cracking.

Under those conditions, one goes forward not because one has either knowledge or skills but because one has a self that is adequate to such an uncertain world. One's being has a will to go on. In using such a language, we do not have to invoke Nietzsche's Overman, with its hint of cavalier self-belief, for what is at issue here is a self that is capable of having some security in the world, even as it is buffeted by the world. For that, in turn, the self has to be self-energizing and self-propelling; and we surely saw indications of such selves in our three quotations.

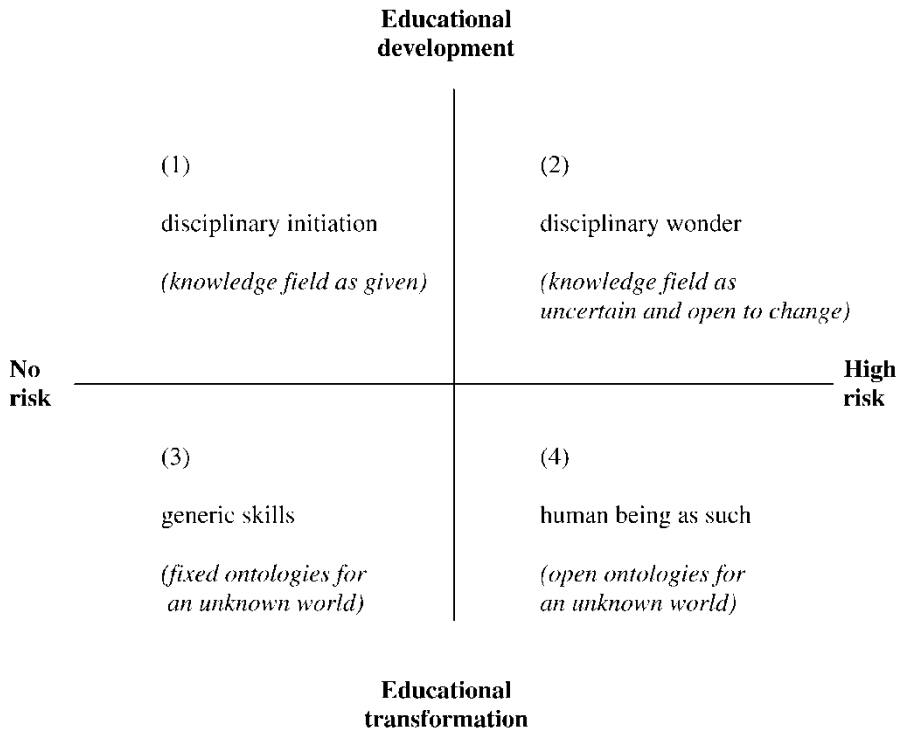


Figure 1. Pedagogical options: a schema

Pedagogical uncertainties

To say, however, that the self—in an uncertain world—has to be particularly self-energizing in no way curtails curricular and pedagogical challenges. On the contrary: the reflection at which we have arrived opens up curricular and pedagogical challenges. Of these two sets of challenges, the greater lies in the pedagogical challenges.

Let us plot the challenges in broad-brush terms. Two axes suggest themselves. One axis has at one pole ‘educational development’ and, at the other, ‘educational transformation’; a second axis has, at its poles, ‘no risk’ and ‘high risk’. This generates the schema illustrated in Figure 1.

We can chart the learning opportunities that this grid offers us in the following way.

Box 1

Let us say, perhaps even generously, that most higher education programmes can at least be understood as offering some form of educational development: the student advances in understanding and skills. However, the forms of educational development

on offer may typically be construed as largely shorn of risk: the sheer prior specification of aims and objectives and an encouragement to frame curricula guided by the requirements of professional bodies and—in the UK, at least—against national ‘subject benchmark statements’ all have the latent function of producing curricula that are lacking in risk. Uncertainties are kept to a minimum: this is the educational logic at work.

Box 2

To be fair, academics who take their teaching seriously have long found spaces to do creative and generous work, imaginatively constructing curricula that help to transform students. Where such imaginative teaching is taking place, we may envisage even that students are placed in educational situations that are, in a sense, risky. These students are invited to stretch themselves, as they grapple with the challenges of developing their own take on matters.

Box 3

Increasingly, there is a sense emerging that such curricula are inadequate, even if they are creative and sponsor considerable educational development among the students. The learning offered, even by Box 2 curricula, is too much designed to reproduce academic identities. On this reasoning, creative and imaginative chemists and philosophers can only carry society so far. What is needed is a different kind of transformation, a transformation in which the student can move in an accomplished way in the wider society. It is out of such thinking that we have seen develop a curricular discourse of ‘skills’ including even ‘generic skills’.

Here, in this discourse of skills, we are offered a curricular approach that promises to transform students but it is relatively risk-free. It is a paradox of this pedagogy that it claims to be able to bring students out of their academic domains into forms of human being more adequate for a changing world than a more purely academic curriculum could offer (no matter how creative) but it does so by attempting to specify clearly the skills that are to be developed among the students. In short, we are confronted in this idea of education with the nonsense belief that we can generate human being for uncertainty through a new kind of certainty in the curriculum.

Even generic skills offer no succour here for, in a world of uncertainty, in which the self is destabilized, an educational project built around skills cannot meet the bill. For what is in question is human being in a world of conceptual and ontological uncertainty; and that is not going to be addressed by talk of skills, generic or otherwise. A different order of educational response is called for.

Box 4

The final quadrant offers us the possibility and the challenge of a curriculum not only of educational transformation but also of high risk. This is a curriculum that is aimed

at the transformation of human being; nothing less. At the same time, it intends to strive to this end through pedagogies that are themselves characterized by uncertainty. A pedagogy for uncertainty cannot be—as in Box 3—technological in nature, in which ends and outcomes are tightly specified. *This* pedagogy allows for human flourishing as such. A human flourishing here is precisely that of living effectively amid uncertainty. At the heart of such a curriculum will be an exposure to dilemmas and uncertainties. These may spring from complexities within a field of knowledge (as in Box 2) but, here, they will widen such that human being itself is implicated.

Dilemmas and uncertainties, in this curriculum approach, may include, for example, a confrontation with the limits of knowing in the field, and with the limitations of the field as such. Here, in this exposure to supercomplexity (to draw on one of our earlier terms), students will come to understand that academic disciplines can only carry us so far in addressing the open-textured challenges of supercomplexity. Where there are multiple descriptions of the world, further knowledge is going to be inadequate. What is called for are new modes of human being that just might be adequate to such a challenge.

Pedagogical disturbance

A curriculum for supercomplexity, of the kind prompted by Box 4 of our schema, will be aided and abetted by a pedagogy for supercomplexity. Thinking imaginatively about the components of a curriculum that is likely to sponsor a learning for uncertainty is a necessary condition but it cannot be a sufficient condition of bringing off the educational aspiration at work here. For that, the actual learning processes themselves will also need to be both high-risk and transformatory in character.

A pedagogy of this kind will be a pedagogy that engages students as persons, not merely as knowers. A pedagogy of the kind located in Box 2 will be one that entices students into new cognitive spaces. It will offer disciplinary delight and challenge (Reeves, 1988). It will invite the student to take up his or her own stances, and help form the courage to do so. The pedagogical journey will be one of encountering strangeness, of wrestling with it, and of forming one's own responses to it. There are disturbances here but it is a set of disturbances that are the outcome of trying to understand and then making one's interventions in an already pre-structured world. Much as it prompts significant forms of individual development, those forms of development are largely framed, at best, by the uncertainties generated by navigating a field of knowledge. This is a largely epistemological journey.

In contrast, in a pedagogy of the kind that is located in Box 4, the disciplinary field is still present but it recedes somewhat. More to the fore here are educational processes that disturb human being as such. A pedagogy for uncertainty gains its ultimate achievement when the self is engaged. As we have seen, academics in their teaching role are bringing off this educational aim on a daily basis. Such a pedagogy is to be understood not primarily through pedagogical strategies, but is much more to be caught through metaphorical descriptors. It is not unimportant to consider the balance between different forms of student experience; between the use of lectures,

seminars, projects, and student-led tasks, whether individual or collective. But considerations of that kind are liable to drag us back to Box 2.

If we are to capture the kind of pedagogy that is in question here (in Box 4), then a quite different language is required. A language for risk, uncertainty and transformation of human being itself calls for imagination. It may be a poetic language, a language that speaks to human being. It might be a language of love, of becoming, of disturbance, or of inspiration. What is it for human beings to be encouraged, to be brought forth, out of themselves? Smiles, space, unease, frisson, humanity, empathy, care and engagement may be helpful as descriptors; but each pedagogical situation sets up its own educational challenges and the imagined possibilities will be sensitive to each setting (cf. hooks, 1994; Mills, 1994; Nussbaum, 2000).

Basil Bernstein (1996) offered the concept of ‘framing’, which may seem to be helpful here. Is the pedagogy being urged here not one that we might characterize as one of relatively open frames? In other words, a pedagogy for uncertainty requires relatively open relationships between teacher and taught. Clearly, that is the case. Indeed, if students are expected to come into an educational situation of some risk, and so make themselves vulnerable, we can expect nothing less from their teachers. In pedagogical risk, all are vulnerable. The pedagogical frames, therefore, are bound to be open, as each party in the pedagogical transaction discloses her/himself to the other.

But the openness of the pedagogical frame here is of a particular kind. After all, Box 2 itself requires an open pedagogical frame. In that curricular quadrant, the teacher teaches the students as much as he or she teaches the subject. There is a human reciprocity present, as the teacher empathizes with her students in bringing them to a position of epistemic delight. But it is an epistemic delight: it is a delight fostered as the student comes to live in a new cognitive universe and to enjoy the new capabilities that that process has opened up. In contrast, in Box 4, the risk and the mutual disclosure are more of a disclosure of human being as such. The openness of the pedagogical frames is not just epistemological but it is ontological in nature. The students come to know each other as persons; and to a degree, too, they come to know their teachers as persons. This is unbridled openness of the pedagogical frame.

But what, then, is being fostered in such a pedagogy for uncertainty? Where does this openness, this mutual disclosure, this personal risk and disturbance, lead? The outcomes, we have seen, characteristically lie neither in knowledge nor in skills: neither domain can carry the day in a world of uncertainty. What counts, it surely follows from our explorations here, is sheer being itself. But how, then, are we to understand *being-for-uncertainty* and how are we to understand such being in such a way that it can help orient pedagogies in higher education?

Being-for-uncertainty does not especially know much about the world nor have at its disposal a raft of skills to deploy in and on the world. Being-for-uncertainty stands in certain kinds of relationships to the world. It is *disposed* in certain kinds of way. It is characterized, therefore, by certain kinds of disposition. Among such dispositions are carefulness, thoughtfulness, humility, criticality, receptiveness, resilience, courage and stillness.

It is, perhaps strangely, dispositions such as these that will yield the ‘adaptability’, ‘flexibility’ and ‘self-reliance’ that the corporate sector so often declares it looks for among its graduate employees. So these dispositions will have economic and performative value. But that cannot be the educational justification for designing curricula and engaging in pedagogies that are likely to sponsor the formation of these dispositions. They are to be fostered because they offer the prospects of an education adequate to a world of uncertainty. They offer, in short, the fashioning of being that may thrive in such a world.

Conclusions

Learning for an unknown future cannot be accomplished by the acquisition of either knowledge or skills. There is always an epistemological gap between what is known and the exigencies of the moment as it invites responses, and this is particularly so in a changing world. Analogously, skills cannot be expected to carry one far in a changing environment: there can be no assurance that skills—even generic skills—appropriate to situations of the past or even the present will help one to engage with the future world in a meaningful way. Indeed, in a changing world, it may be that non-engagement is a proper stance, at least in some situations. A more positive term, to encapsulate right relationships between persons and the changing world in which they are placed, might be ‘wisdom’.

These reflections take on added weight given the characteristics of the unknown future that awaits. The unknown-ness derives not just from the complexity of interlocking systems—and new technologies, for instance, can be seen in this way. The unknown-ness derives from the complexity of multiplying descriptions of the world such that we cannot even describe the challenges that face us with any assuredness. It is this latter form of complexity of rival descriptions of the world—this supercomplexity—that poses particular challenges for learning.

For what is in question in a situation of supercomplexity is neither knowledge nor skills but *being*. The pedagogical task is none other than the eliciting of a mode of being that can not just withstand incessant challenge to one’s understandings of the world, such that any stance one takes up is liable to be challenged, it is the even more demanding task of encouraging forward a form of human being that is not paralysed into inaction but can act purposively and judiciously. It is a form of action in the face of incessant challenge that can still find reasons for such action. Such action springs from a form of being that is authentic in character.

Construing the pedagogical task as the formation of authentic being turns us towards neither knowledge nor skills as central categories but rather to certain kinds of human qualities. They are the qualities that both make authentic being possible and are also, in part, generated by a drive towards authenticity. They are qualities such as carefulness, thoughtfulness, humility, criticality, receptiveness, resilience, courage and stillness. The achievement of qualities such as these calls for a transformatory curriculum and pedagogy which are themselves understood to be and practised as

endeavours of high risk; high risk not just for the participants but also for the academic staff in their educational roles.

Why, it might be asked, is this of significance in the context of higher education? Are not these educational challenges characteristic of many educational settings, especially those connected with projects of lifelong learning? So they are; but it may be observed that there is a particular connection between the kind of learning sketched out here and higher education. For the learning as sketched out here can surely, without hubris, be understood as a form of higher order learning. It looks, after all, to human being and becoming that offer the wherewithal for standing up to the world and engaging with it and in it purposefully. It is a learning for an unknown future that enables the self to come to understand and strengthen itself, much as it recognizes that there is always a gap between that self-awareness and the need to act in the world.

Part, therefore, of such a learning is acquiring the capacity to live with the existential angst that derives from an awareness of the gap between one's actions and one's limited grounds for those actions. Understood in this way, a pedagogy for an unknown future becomes a pedagogy with the unknown built into it as living principles of educational exchanges and accomplishments. Designing a curriculum and practising a pedagogy of this kind is not a set of practices that we readily understand. They are, in turn, matters about which we need to go on learning.

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