

Even Higher Learning Takes Place by Doing: from postmodern critique to pragmatic action

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ABSTRACT *This article starts out from the postmodern critique on higher education, which presents a challenge to discard the contemplative conception of knowledge and promotes a pragmatic conception of inquiry, knowing how and higher learning. Experimental everyday inquiry and scientific research do not differ from each other in this respect: both entail learning by doing as the experience accumulating through action shapes both the actor's habits and the knowing how on which they are based. Under the conditions in which the special nature of traditional scientific knowledge is questioned, students should be acquainted with unprejudiced action that experiments with and questions everything we are used to, and yet is based on consideration even in doubtful situations. The article offers a starting point for embedding learning that is achieved by inquiring, experimenting and doing in the higher education curriculum. Although questioning conventional production of contemplative knowledge, the article calls for a strong academic community which allows researchers themselves to decide in their scientific discussions what is science and what is not.*

According to writers who take a critical stand on modern developments (see, for example, Readings, 1996; Scott, 1997; Barnett, 2000), the functions of the university have become blurred, even threatened, and knowledge produced by conventionally conceived science is no longer considered the self-evident truth. Around a decade ago, Gibbons *et al.* (1994) presented their well-known thesis that a new model of knowledge production (Mode 2) is replacing the old (Mode 1) conception of knowledge, questioning also the traditional criteria of truth. Mode 2 is characterised by the proliferation of knowledge production in the context of application, which is mostly problem-specific and guided by the requirements of practical relevance. More recently, Nowotny *et al.* (2001) have introduced the concept of contextual knowledge, the value of which is mainly defined by its social relevance, and hence ultimately on the basis of supply and demand.

The university's role as the primary site of knowledge production is being challenged by a range of heterogeneous knowledge producers. Just as the beginning of the twentieth century witnessed the end of the nineteenth-century mode of knowledge, we are now said to be witnessing the end of the mode of knowledge that dominated the twentieth century. Specialisation within disciplinary boundaries is no longer the exclusive form of knowledge, nor is the university the privileged site of knowledge. When boundaries become blurred, multidisciplinary takes over. The loss of certainty is penetrating the heart of science (Delanty, 2001, pp. 3–4).

The university has been a site for prizing various forms of contemplative knowledge, by which we also mean knowledge that has sought to mirror the world, to represent the

corresponding reality. Postmodern critique has set the challenge that Knowledge, with a capital K, should be replaced by various knowledges. Of course, the pragmatic tradition has questioned Knowledge with a capital K right from the nineteenth century. Delanty argues that consensus on what constitutes knowledge has been replaced by dissensus, and that culture, traditionally reproduced in the university, has become contested:

If the university is not to degenerate into technocratic consumerism by which students become mere consumers of knowledge and the university a transnational bureaucratic corporation legitimating itself by the technocratic discourse of ‘excellence’, it will have to discover another role. (2001, p. 6)

In this article, we will not, however, seek a new role for the university, but concentrate on a pragmatic exploration of the preconditions for learning and inquiry that best serve higher education.

In addition to the fixed conception of knowledge, the problems faced by the mass university include teaching drift, that universities have become too school-like, and labour market drift, increasing vocationalisation (see Kivinen, 1999). Research into the hidden curriculum (Bergenhengouwen, 1987; Ahola & Olin, 2000), on the other hand, has revealed that, once having entered the university game, students learn the strategies that will lead to graduation even if they do not pay maximal attention to all their courses. When students notice that the official curriculum is fully packed with abstract matters they do not consider reasonable to learn, some of them will concentrate on finding the right examination pointers, and may appear to have done a maximal amount of learning with relatively little effort.

Even if the university is not the main producer of knowledge, it is still the most important provider of credentials. Knowledge is no longer the privilege of the elites, with the mass public also claiming to be knowledgeable. People today are well informed about various issues—food, health, lifestyles, the economy, the environment, and science. But knowledge has not just become available to an increasing number of people, it has also become highly contested (Delanty, 2001, pp. 104, 113).

The knowledge produced by universities no longer enjoys the autonomy it had as part of the elite culture of the privileged social stratum; there are many kinds of knowledges and there is growing scepticism about the claims of universality made in the name of cognitive rationality. And there is no reason to postulate a hierarchical order of knowledge into higher and lower forms, i.e. basic and applied forms of knowledge (Delanty, 2001, p. 137).

We agree with Barnett (2000) that one of the most significant new challenges faced by higher education is that the various forms of student action (promoting their skills) have to find their place within the curriculum, and, furthermore, that in a dynamic society, these kinds of skills have to be adaptable so that individuals can flexibly move from one situation to another. In this article, we will argue for Rylean knowing how and Deweyan learning by doing in a modified form. These are highly feasible alternatives for renewing the higher education curriculum as long as they are not subordinated to the various forms of ‘contemplative’ knowing that knowledge. In our pragmatic view, talk about knowledge as an abstraction unconnected with action is futile. Knowledge is first and foremost a matter of doing. Inquiry requires the actor’s point of view, since it is the only point of view anyone can have.

For the sake of clarity, it should perhaps be pointed out that, although pragmatism has North American roots—in our case, mainly in the thinking of John Dewey (1859–1952) and Richard Rorty (1936–)—our discussion mainly focuses on European universities. But no matter what the university is like or where it is located, only a strong academic community can guarantee free research, debate and science.

Dewey provides us with the tools we need to conceptualise inquiry in a manner that allows us to concentrate on the actual processes of learning, inquiry and knowing how. Rorty, on the other hand, offers a well-founded anti-representational conception on, for instance, questions concerning science and truth. In this article, we will demonstrate that the pragmatic conception of experiential learning by doing covers the whole range of learning, from the most basic everyday learning to higher learning and learning how to conduct real research projects in the post-doctoral phase.

Postmodern writing has all too often only concentrated on attacking modernity, without offering any constructive input that would enhance practical action. The pragmatic alternative we have developed (Kivinen & Ristelä, 2001) takes this postmodern critique into account in many ways, but it also acknowledges the importance of practical measures. An exploration into the history of pragmatism immediately convinces one about the arbitrary and artificial nature of distinctions such as modern–postmodern: Dewey, who wrote in the nineteenth and early twentieth centuries, is just as critical (in a postmodern fashion) of the illusion of the uniqueness of scientific knowledge, as is Rorty, who is still a prolific writer in the twenty-first century, and who, let us add, does not (any longer) even want to confess to being a postmodernist.

We are concerned here with the conditions that allow skills and the action that promotes knowing how, that is, learning by doing, to be included in the higher education curriculum. We begin by analysing the concept of action.

In Action a Person Cannot but Learn; growth is the only end of education

Dewey's naturalistic conception of human action is based on the idea of life as a transaction between the organism and the environment. In order to live, humans act and cause changes to their environment and experience the effects of their action. Just as knowledge is knowing, the actor should not be simplified as a noun, when we are actually dealing with a verb: the actor is an active agent. In a Deweyan sense, experiencing comprises both deliberate doing and undergoing. The key question of experiencing, as seen from the actor's point of view, is the connection between the action and its consequences (Dewey, 1980, p. 146; 1982, pp. 128–129). The experience accumulating in action reinforces existing habits and creates new ones. The formation of habits is the basis for all kinds of learning, whether this involves the reinforcement of certain forms of conduct, the weakening of others, or the emergence of whole new ways of acting. It is self-evident that habits will emerge. As long as a person lives, they act; one cannot live without acting and act without learning. The question is how and what we learn (Dewey, 1983, pp. 15–16, 54, 84; 1986, pp. 21, 38–39).

We learn by trying out, on the one hand, the possibilities opened up by various situations, and on the other, the various ways and contexts of using tools. By testing how people react, we learn how others are likely to react to our acts. We learn how things we come across can affect us, how they can prevent our acts, or how we can use them to promote our interests. We learn to manage the connections between various things and hence also to affect the consequences of our own action. (Dewey, 1980, pp. 280–281).

According to Dewey's conception, which is Darwinian in origin, socialisation is about how one animal species began, by changing the surrounding conditions, to gradually have a grasp of its own development: this is how socialisation into the cultural environment created by human beings became part of human growth. In Dewey's view, growth is the end of education; growth is what education should promote and support. Education has no end beyond itself; it is its own end. The educational process is one of continual reorganising, reconstructing and transforming. Hopefulness, the ability to believe that the future will be

different, freer and thus better than the past is the precondition for growth. All that Dewey ever wrote advocates hopefulness as seen in this way. From as early as the nineteenth century, he advocated the currently fashionable concept of lifelong learning, since the aim of education is to enable people to grow continually. The 'object' of learning is the very thing that rewards the learner, that is, the ability of continuous growth (Dewey, 1980, pp. 54, 107; see also Garrison, 1998).

Learning is doing and experiencing, but not necessarily conscious: we often act and learn unconsciously, and only a minute part of the experience that forms our learning can be referred to as Knowledge. Dewey leaves plenty of space for such action and competence, which has since been referred to as 'knowing how' (Ryle, 1949) and 'tacit knowledge' (Polanyi, 1969). According to Dewey, knowledge that people acquire early and which remains most deeply rooted is knowing how something is done: how we read, how we talk, write, ride a bicycle, use machinery, manage other people and so on. When criticising educational institutions, Dewey points out that the whole idea of learning for its own sake is nonsensical. In Dewey's opinion, no one has been able to prove that learning is most effective when it is made into a conscious effort, done for its own sake. He goes on to argue that the exact extent to which school-like conditions make students aware that they are studying is the same extent to which they do not learn. (Dewey, 1980, pp. 44, 181, 192).

People are able to do many things (like speak their mother tongue) without being able to explain the rules and principles (such as grammar) upon which this action is based. This is not (only) the result of lacking communication skills—the inability to 'explicate' the rules that govern implicit action—but it is because knowing how cannot be reduced to knowing that. We do not by any means want to deny or nullify the value of 'intelligent' action, but in line with Ryle (1949), we wish to revoke the idea that rational acts require the involvement of some specific intellectual (extra) means.

Reasonable and unreasonable operations cannot be separated from each other on the grounds of any assumed original cause, but through their consequences in action. Knowing how equals doing something skilfully: when necessary, skills can be measured by performance. In this pragmatic sense, there is nothing suspect about discussing unconscious action. People mainly do whatever they do without describing their acts to themselves by articulated thinking. Conduct can be intelligent even if it is not constantly accompanied by inner comments. We can drive along in busy streets without articulating a single thought about driving, and we may type several pages without sparing one thought to the use of the computer's keyboard. It is only when our action becomes interrupted, discontinued, that we might have to begin to think about what we are actually doing.

Deweyan pragmatism overcomes the dualism between thinking and doing. Conscious thinking is triggered when action is prevented or disrupted and the 'direction' of action has to be altered. Reflection that really results in something means shaping one's habits in situations in which all has not gone according to one's expectations. Thus, it entails the creation of new habits, although this cannot be independent of existing ones. Without habits there would only be confusion and doubt: no mind, no consciousness. The thought of pure reason, or a mind or will unconnected with habits, is merely a myth. Habits stimulate, prevent, strengthen, select and concentrate acts without anyone or anything actually employing them. The self and the will equal all the person's habits (Dewey, 1983, pp. 15, 21–22, 45, 54, 88).

Highlighting the distinction between himself and the 'intellectualistic' conception of action and education that he has criticised, Dewey liked to emphasise that habits are not ways of acting that can be used by the 'will' or 'reason'; but that reason and will, as well as the ways in which we are used to act and what pleases us, are all embedded in our habits. Character

is an interpenetration of habits; a 'self' that is independent of habits does not exist. When habits change, human action changes accordingly, which leads others to think that the whole person has changed (Dewey, 1983, p. 29).

A human being acts, experiences, forms habits and learns language in interaction with others; the social environment, the action of other people, is as natural an environment for the individual as nature itself. According to Dewey, it is not just that social action is communication, but that all communication is also educative. To receive communication entails the expansion and alteration of one's sphere of experience; one becomes part of what the other one has thought and felt. However, the transmitting party of the communicative act will not remain unaffected either. Experiences have to be formulated in order to be communicated (Dewey, 1980, pp. 8–9; 1983, pp. 15–16, 43–44).

Referring, for instance, to Knight-Abowitz (2000), we can say that, unlike present-day communitarians such as Etzioni, Dewey argues that the communication which creates and maintains communities is not only a peaceful, perfectly coordinated exchange of views resulting in common purposes, but entails conflicts that arise in communal life: 'consideration of conflicting claims and views is not only right but personally and collectively enriching' (Dewey, 1940; quoted in Knight-Abowitz, 2000, p. 885).

In his essay 'Education as socialization and as individualization', Rorty (1999) starts from the idea that the term 'education' includes two necessary processes: socialisation and individualisation. According to this perception, the role of schools is to acquaint children and young people with what previous generations, and especially their parents, regard as the truth. At this level, the task of education is not to question the prevailing consensus of what is true. Socialisation must happen before individualisation. Education for freedom cannot begin before certain constraints have become rooted. In Rorty's view, by contrast, the role of higher education is no longer to incorporate given truths, but to stimulate the imagination and the critical mind, to fuel doubts about unquestioned truths and the consensus of predominant prejudices. If the task of the lower levels of education is to prepare literate citizens, the task of universities is to produce creative individuals who can also critically evaluate the socialisation they themselves have gone through, and who understand, among other things, that the national history into which they have become socialised is an unfolding, open-ended narrative. Rorty is also an avowed ironist, who thinks that everyone should be aware of the conditional nature of their beliefs and desires, and be able to sociologise how one has become what one is.

Whereas schools are characterised by a certain consensus over basic matters, universities are expected to foster a working dissensus. The creative university practices outlined by Rorty can be best ensured by a strong academic community that remains loyal to its principles.

The pragmatism we have acquired from Dewey and Rorty is in a way Darwinian and naturalistic in its origins. It sees learning—or science—not as something proceeding towards a known end, but as following the logic of evolution: what functions shall survive.

From the Search for Truth to Appropriate Action

Pragmatists are keen to get rid of the mysticism that surrounds thinking, and to examine thinking in its context as part of each actor's appropriate action. Language, which has developed into tool for coordinating action between people, is the starting point for all conscious thinking: words and language are tools for thinking. The ability to use language in thinking, speaking and writing is a specifically human method, and it has been learnt just like any other skills that have been embodied as habits. Thinking has to and can be learned, just as any other action that consists of habits. Our pragmatic conception of knowledge is based

on an anti-representational view of language and knowledge in the same way as Rorty's. This notion is about words, not understood as representations reflecting the world, but as nodes in the causal web that joins together the organism and its environment. Communicating and coordinating our actions, language allows us to seek to grasp causal processes in a way that enables even more appropriate action. It makes sense to follow Peirce and to operationalise beliefs as habits of action (Peirce, 1898). Language allows us to coordinate our actions with the actions of others (Rorty, 1999, pp. xxiii–xxiv).

When beliefs are perceived not as representations but as ways of acting, there is no point in asking whether we describe something like it really is. Beliefs can only be evaluated in comparison to other beliefs: it has to be asked whether a certain description would be more suitable for one purpose than another. Rorty (1998, p. 116) and Dewey (1980, p. 304) agree that knowledge or truth are found in those beliefs we can trust, which we do not have to doubt. Dewey also emphasises that knowing is not only a feeling of certainty, but a readiness to act, without hesitation, guided by a belief that is considered knowledge. From an anti-representational point of view, it is needless to make a distinction between knowing and using and knowing and doing.

Research is one way of exploiting 'reality'; it is a way of obtaining information and knowledge that helps us to survive in the world. As Rorty (1982, p. xvii; 1999, pp. 33, 54) argues, modern science is not better than what preceded it because it represents reality more truthfully; modern science merely functions better, that is all. The relationship between our claims about the truth and the rest of the world is causal, not representational. The world gives us reasons to hold on to certain conceptions as long as they prove reliable in guiding us to where we aim to go, or help us to achieve what we want.

According to Rorty (1999, pp. 82–83), the advancement of science is not about revealing more deeply penetrating levels of reality; it is about integrating an ever-increasing amount of knowledge into logical beliefs, an ever-enlarging web of conception. Understood in this way, advancement has no end: science, which is one of the ways by which human beings survive in their environment, has no perfect, ready form, nor does any other form of life or action that has been produced by evolution.

Even though education needs to enhance the learner's skill to adapt to survive future requirements, the prerequisites for learning lie in the present. Dewey notes:

Because the need of preparation for a continually developing life is great, it is imperative that every energy should be bent to making the present experience as rich and significant as possible. Then as the present merges insensibly into the future, the future is taken care of. (1980, p. 61)

More specialised education is often called for in the name of preparing for the future. However, the uncertainty that lies ahead actually calls for an entirely different reaction: one should obtain as diverse skills and as many alternative ways of acting as possible. Since no one knows for certain what kind of knowledge and skills are needed in the future, higher education, too, should provide students with as many skills as possible.

Besides truth-seeking, universally applicable knowledge, postmodern critique also calls into question the rationale of scientific specialisation along the lines of conventional disciplines. Even the highest form of education can no longer only entail the development of disciplinary skills that are rather narrowly seen as 'cognitive', but also the acquisition of a variety of habits that comprise dispositions and ways of acting.

The versatility of higher education should not only be perceived as studying texts representing various disciplines and topics. Since a considerable deal of knowing how is tacit and cannot be reached by linguistic consciousness, the action that is needed to promote it

cannot only be coded into textbooks and curricula. For instance, simulation applications should be developed in a network environment for the use of social and human sciences students: these applications allow experimental learning, and social scientists could construct and plan an enormous variety of operations and operative models that we might come across in the future. It is, after all, inevitable that people's ways of life, activity and participation will be entwined with technology.

On the other hand, since the skills learnt in higher education are mainly linguistic, it is clear that language will be needed in learning them: one must read, think, write and discuss. Language is a tool the use of which requires training, and which should be constantly maintained and developed. Just as with other tools, the best way to learn how to use language is to do things with language, to succeed better every time in overcoming problematic situations in a way which adequately responds to one's aims. It is all about the learner learning to think or speak in a new way, learning to use appropriate descriptions for changing needs.

To be precise, all educational influencing is *redirecting*: it directs a person's ongoing action to another path. If we do not acknowledge the habits that students have already acquired, all attempts to redirect their action, to make them learn, are likely to fail (Dewey, 1980, p. 30).

From Doubt to Consciously Experimental Learning

Paradoxically, uncertainty makes people learn: without uncertainty, we would have learnt close to nothing. Habits become problematic when action becomes disrupted; a situation emerges that writers on pragmatism from Peirce onwards have described as 'doubt', which results in old beliefs being replaced by new ones. When we think about research and any other kind of inquiry in a Deweyan sense, the starting point is always an ambiguous or doubtful situation. We are doubtful because the situation is doubtful and needs a solution. Doubt arises from the situations the actor comes across, and there is no reason to try to reduce it to a matter of psychology. We doubt because the situation is in itself doubtful. (Dewey, 1986, pp. 109–110, Peirce, 1905).

People do not usually tolerate uncertain and doubtful situations for long, but want to rid themselves of the resulting sense of restlessness as soon as possible. The most reasonable would, nevertheless, want to consider the pros and cons of the situation before doing anything that cannot be undone. Those who possess suitable habits can use them to buy time for consideration. They can afford to stop and think (Dewey, 1984, pp. 178, 181).

In some cases it may even be reasonable to seek a problematic situation and, hence, in a sense to force oneself to collect new experiences. According to Dewey (1984, p. 182), this is precisely what science is about. In his opinion, the scientific attitude can almost be defined as an ability to enjoy doubt. A skilled researcher is actually happy about a doubtful situation and cherishes it before discovering a new way to proceed that advances his or her research.

All education should encourage and train learners to act in doubtful situations. Higher learning in particular should be experimental and free of prejudice; it should question what is taken for granted, and not only concentrate on the 'application' of given means of acting. In order for it to lead to the emergence of appropriate habits, experimentation has to be connected with constant deliberation of the consequences of one's action. Courageous and creative experimentation should at the same time be responsible, which means making continuous assessments about the likely consequences and acknowledging them in action. By 'intellectual responsibility', Dewey means a clear understanding and commitment to what the results of believing in something are in real life (1980, pp. 185–186). Both pragmatic and

postmodern thinking consider it strange to believe in value-free and objective science, in the name of which researchers can withdraw from all responsibility regarding the consequences of their work.

In a Rortyan sense, metaphors enhance thinking because they help us to move beyond the boundaries of conventionalised thinking and open up fresh points of view. In a sense, metaphors are tools for unlearning. Rorty's entire philosophy is a philosophy of learning in the sense that in his view, the self is a web of beliefs, emotions and expectations that the human being weaves throughout the action. The best thing an individual has is the ability to act with the tools available in each situation and apply them to get on with oneself, others and the rest of the world. Each measure that supports the ability to function—whether it is called edification, teaching or education—is for the good of the individual.

Since all terms become 'evaluative' when used to describe people, there is no need within the social and human sciences to keep alive the belief that value-free, 'evaluative' terms could be eliminated from research and that this elimination would equal objectivity (Rorty, 1982, pp. 194–195). In our ever-changing world, the role of intelligence is to transmit the past and the future. Rorty (1999, pp. 35–36) states that he expects from science the ability to explain why some preceding research project succeeded or failed in what it did.

If Dewey were asked what the aim of inquiry is, Rorty assumes he would answer that there can be various aims—without any metaphysical presumptions. Possible aims could include: to solve as many problems as possible, convince as many recipients as possible, to gain what one wants or to improve the human condition. From a Rortyan–pragmatic point of view, the not-so-dramatic difference between a construction worker and a researcher can be expressed as follows: one craftsman justifies their doings mainly by reference to how their materials behave, whereas the other refers mainly to the behaviour of their colleagues (members of their community). A carpenter explains (bases) their acts on how wood behaves, a scientist explains (justifies) their acts by how their colleagues behave (Rorty, 1998, pp. 38–39, 41, 43–44).

Nowotny *et al.* (2001, pp. 15, 48, 74, 90) emphasise how an increasing number of organisations in the knowledge society have to become 'learning organisations'—and even 'researching organisations'—in the sense that in order to survive (not only commercially, but also politically), they have to be able to capture and exploit knowledge. According to them, two generations of mass higher education have significantly increased the proportion of knowledgeable social actors. The distinction between research and teaching tends to collapse because Mode 2 knowledge production transforms the relatively closed communities of scientists into open communities of 'knowledgeable' people.

Reluctant though we are to revoke the bravest parts of the visions of the information society, we would note that, ahead of any other organisations, universities should transform themselves into truly learning organisations, even research organisations, instead of continuing their current school-like, bureaucratic orientation. We would like to promote the idea that instead of obtaining knowledge, the focus should be on knowing, in the sense of inquiry proceeding on the basis of experimental learning by doing. This being the case, there is no need for making clear distinctions between studying and researching, nor is there need for a rigid distinction between teaching and research.

Speaking in an almost pragmatic tone of voice, Nowotny *et al.* (2001, p. 260) state that images of science need to be closer to actual practices and their rapid changes than has been suggested by the traditional, timeless images of science and its pursuit of truth. It is no longer possible to establish a clear demarcation between context and core, hard layers and soft layers, the body of knowledge and images of knowledge:

'Believing' and knowing whom to believe, when and to what extent, as well as in what sense, becomes part of 'knowing'. It no longer follows automatically from 'belonging' to either an expert or lay community. In this sense 'we have all become experts now', but this expertise, widely distributed, is continuously being tested, as well as contested, before being trusted. (Nowotny *et al.*, 2001, p. 262)

A Researcher's Reality Shock

From a pragmatic point of view, there is no need to make a fundamental distinction between everyday learning, inquiry or scientific research: they all are matters of acquiring new ways of action and controlling new kinds of connections. Scientific research may be more disciplined, controlled and target-oriented than everyday inquiry, but both are, all the same, experimental action where one gains experience and, thus, learns (Dewey, 1980, pp. 281; 1984, p. 70).

Even in research training (i.e. in the postgraduate and post-doctoral phases) learning by doing is an indispensable element. The key thing that needs to be recognised in the socialisation of doctoral students into professional research work, both in the social sciences and especially in what are known as laboratory and field sciences, is that experiments and other forms of research do not automatically produce useful or even usable results. In this context, Delamont & Atkinson (2001) speak of reality shock. By this they mean that, during their studies, when attending methods courses and seminars, students encounter, virtually without exception, only those kinds of research problems that result in expected outcomes. However, when they write their dissertations, and especially when they are conducting post-doctoral research, young researchers will discover that real science is complicated and that dead ends and failure are frequent, even if they have closely adhered to the methodical rulebook. Gradually, young researchers will learn by doing those tacit skills and knowing how that will also yield more usable results. Simply by reading scientific literature, articles and research reports, doctoral students do not get hands-on experience of tacit skills and knowing how, since most papers report on successful research and achieved results; published texts do not tell about failure, dead ends and wrong paths, which are very common in practice.

Most assignments are planned together with a supervisor so that the goals, methods and, to an extent, the result are known and given in advance. This is not how things work in everyday research. Learning how to face and overcome failure is essential if one wants to become a successful researcher. This is where the research group and more experienced colleagues can often offer an important helping hand.

A substantial part of learning research practices entails tacit knowledge and skills, which are something that cannot be articulated, put into words or verbally transferred, something that is caught but not taught. In scientific work, tacit knowledge is achieved by learning by doing and by cumulative experiences of knowing how. In most cases it can best be achieved by participating in the practical work of a research group: there one can, gradually, learn the right habits. On the other hand, one important skill is to learn to avoid the mistakes one is likely to make in practical work. The knowing how or tacit knowledge of research means 'knowledge and skills' that are acquired in practical research activities through experience (trial and error), by becoming gradually socialised into the practices of the research group. The acquisition of knowing how and tacit knowledge is not essentially a matter of verbal learning and instruction (cf. Collins, 2001). Researchers know more than they can tell (cf. Polanyi, 1967).

As Acker (2001, pp. 61–77) reminds us, even during the graduate school phase, there is at work a hidden curriculum that steers young people aiming for an academic career to

acquire such a habitus and working habits that will merge them most smoothly with the ethos of the department. In this case, socialisation includes both the conventions of the discipline and the practices of the department. Under the conditions of blurring disciplinary boundaries, socialisation and the acquisition of a researcher's identity become conditionalised as a kind of identity project within multidisciplinary research groups. Belonging to an institution, a purely administrative construction, is no real alternative to socialisation (cf. Nixon *et al.*, 2001).

The Freedom of Strong Academia: working dissensus

Talking about the uncertainty and rapid change that dominate our times mainly serves the speakers' own purposes. This whole line of thinking, according to which we have now left behind a certain era and entered a new, uncertain one, is a kind of contemporary fallacy, resulting mainly from a lack of a sense of history. From a pragmatic viewpoint, uncertainty is a characteristic aspect of human action rather than a perplexing deviance.

In shortening the lifespan of useful skills, technological advancement may transform the knowledge obtained by years of study into a handicap instead of an asset. The knowledge obtained at universities is at risk of losing its currency in less time than it takes to complete the degree. The university degree has become human risk capital (Kivinen & Ahola, 1999; Bauman, 2001).

On the basis of the pragmatic conception of action, we believe that it is possible to develop higher learning in which experimental research, knowing how and learning by doing are embedded in the curriculum. At the same time, the distinction between teaching and research becomes unnecessary. One mission of university education could be the preparation of students for an unpredictable, ambivalent and sometimes unjust life, and to strengthen their self-criticism and capacity for critical thinking, as well as their sense of responsibility and tolerance of difference. In short, universities should prepare students to cope with permanent change. With the pace at which the world is changing, this is about all they can do; but if they can do that, it is a lot (Kivinen & Kaipainen, 2002).

In our 'knowledge-based societies', we all have to constantly assess which and whose information and knowledge is to be trusted in each situation. Beliefs, on the other hand, can be tested in doing, action, and by their results. Instead of relying on seeming certainties, university teaching should include bold experiments and conflicting views in order to develop habits that enrich actual action.

In discussing the discovery of new, better and more interesting ways of speaking and thinking, Rorty (1980, p. 360) ends up using the term 'edification' instead of education. Edifying also refers to action that can be considered deviant and even creative, since, during its course, the human being is disconnected with the ways of the 'old self', and new pathways are opened up to becoming a new kind of 'personality'. Here, Rorty comes close to the traditional German idea of *Bildung* (self-formation) that characterises how universities are perceived.

The conception of experimental higher learning by doing that we have outlined above does not exclude the Humboldtian idea of the *Bildung* university, even though rigid distinctions between studying, (scientific) research and teaching (that is based on it) are needless. There is at least one role in which the university remains totally indispensable: as an incubator of new generations of researchers, in which no other institution can succeed even today.

In spite of the internal disputes within the realm of science and research, the academic community relies on its ability to maintain its freedom. The community should do its utmost

to ensure that its members can themselves debate what is science and what is not, without outsiders intervening. In this context, Rorty (1998, pp. 67–70) also argues that the healthy, free university can generate fruitful societal debates. Paraphrasing Goffman's concept of working consensus, Bourdieu (1991) has begun to use the concept of working dissensus. His point is that the premises underlying the autonomy of each individual scientist and scholar equal the autonomy of their field, which as to be created and constantly defended in the continuous struggle over symbolic power.

However, somewhat paradoxically, academic freedom is not doing all that well even in the 'free world' of Rorty's homeland, the campuses of America. Kors & Silverglate (1998) are concerned about the progressive intolerance that is gaining ground in the name of political correctness. The speech codes generated by the desire to protect minorities and to promote, for instance, ethnic, racial and gender equality, have actually begun to hinder the exercise of free speech. Academic freedom, which is basically an individualistic concept, and defending certain group rights have collided in a way which is not in harmony with the individual freedom of expression that should abide within the academic community. On the other hand, the report of the Gulbenkian social scientists' commission (Wallerstein *et al.*, 1996), takes an optimistic, if not naive, view on the US university system, which, according to the report, has always hosted exceptional experiments and which, it is hoped, offers space to new kinds of organisational solutions and an even better future.

Bauman calls for plurality and multivocality, and states that there are, fortunately, so many universities which differ from each other, and that inside every university there is a mind-boggling variety of departments, schools, styles of thought and conversation:

It is the good luck of universities that despite all the efforts of the self-proclaimed saviours, know-betters and well-wishers to prove the contrary, they are ... not measurable by the same yardstick ... not speaking in unison. (1997, p. 25)

If we look inside the university and academia, we may conclude that the experiences that have accumulated throughout the long history of universities provide us with a Rortyan understanding that academic freedom and science do well as long as people within universities themselves can make their own decisions without excessive interference from the outside. As long as academic autonomy remains intact, the appropriate standards of truth, objectivity and rationality shall be taken care of in the practices of the academic community. More generally, we wish to conclude by noting that nowadays, as expertise is widely distributed, knowing whom to believe, in what sense, when and to what extent becomes an indispensable part of knowing. Consequently, doubt, experimentation, testing, contestation and trust are all the same knowing.

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