Audit, Empiricism and Bias: Limiting Understandings of Learning

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Introduction

The need to get as close to objectivity as possible is central to empiricism or post-postivism (Phillips and Burbules, 2000), including what for simplicity I will term the 'new positivism' in educational research. Though most advocates of such research acknowledge that complete objectivity can rarely if ever be achieved, there remains a concerted drive to prioritise research methods that are assumed to get closest to this ideal. This can be seen in recent arguments for the superiority of experimental research (Oakley, 2000; Shavelson and Towne, 2002). It is not my intention here to rework the well-known critiques of research objectivity. Instead I propose to explore some implications of adopting these methodological approaches to the study of learning, especially in the current context of audit and performativity. I argue that such approaches privilege assumptions about learning are increasingly questionable. The result is, for adherents of the new positivism, a strange if unacknowledged paradox of 'objective bias'. In advancing this argument, I begin with a brief general discussion about the nature of learning.

Learning as a Contested Social Construct

Learning is a conceptual and linguistic construction that is widely used in many societies and cultures, but with very different meanings that are often contradictory and contested. There is no external, reified entity that is 'learning'. Rather, people construct and label certain processes/activities/products as 'learning'. To substantiate this point I will identify some common, often tacit, root metaphors which are utilised or implied when learning is considered. Sfard (1998) drew our attention to the

significance of metaphors in relation to learning, when she analysed recent debates about the nature of learning as a contest between the metaphor of acquisition and that of participation. These two metaphors, she argued, present largely incommensurable views of what learning is. Acquisition focuses either on learning as a commodity or, perhaps more accurately, as a process whereby commodities of, say, knowledge or skills are acquired. At its crudest, this amounts to little more than what Bereiter (2002) terms the folk theory of learning – putting stuff (what is learned) into vessels (the human mind). Participation, on the other hand, entails seeing learning as the undertaking of activities within a social context, sometimes conceptualised as an activity system (Engestrom, 2001), sometimes as a community of practice (Lave and Wenger, 1991; Wenger, 1998). Acquisition and participation are not the only contenders as root metaphors of learning. Thus, there is a long tradition of seeing learning as construction. In addition to the intellectual movement termed constructivism, which focuses mainly on the ways individual learners engage with new knowledge, Hager (in press) claimed that workplace learning is best seen as construction, arguing that both acquisition and participation can imply learning as static, rather than as a process. If we move beyond English as a language, other root metaphors become apparent. For example, Dominicé (2000, p11) defines the French concept *formation* '[which] describes the alliance of formal and experiential learning that gives shape to an adult life'. Both participation and formation metaphors share a view of learning as becoming.

Though I will argue that seeing learning as becoming is superior to the view of learning as acquisition, my main purpose is to establish that learning is a contested

social construction. The view we take of what learning is (pre)determines how we understand it, research it, write about it, construct policies to influence it or practices to enhance it. In a recent research project, with Heather Hodkinson, we encountered a clear example of this. The project was an investigation of secondary school teachers' workplace learning. We approached this through observations and repeated interviews. When we first asked the teachers about their learning, we got two apparently contradictory responses. The first was that learning meant being taught on courses. The second, often linked to the first by 'but', was that of course you only really learn through experience. They could not articulate the processes whereby learning through experience worked. For example, if asked how they learning to do something, the replies either entailed telling us in even more detail what they had learned, or simply applying the cliched label 'trial and error'. As we discussed with them learning that we had observed – for example in informal meetings and lunchtime chats, we influenced their thinking through the ways in which we probed about learning. In subsequent interviews transcripts showed significant changes in the ways they understood and conceptualised their own workplace learning. One result of this was to reduce one head-teacher's original enthusiasm for a performance management scheme as the prime means of enhancing the learning of his staff.

Audit, the new positivism and acquisition views of learning

Education in many parts of the Western world, perhaps especially the USA and the UK, is deeply entrenched within what Power (1997) terms the audit society. This represents a particular form of technical or instrumental rationality (Habermas, 1972). Thus, those in power control educational provision through a focus on measured

outcomes. These include external measures of educational achievement such as examination results or standardised test results. In England, these influence external inspection criteria and published league tables, and are often directly linked to funding, for example in Further Education. They are used to identify failing schools.

As Smith and Hodkinson (2005) argue, there are close links between the growth of the audit culture and the emergence of the new positivism. Both are underpinned by the same assumptions about technical rationality. Both appeal to those in power, because of their apparent offering of certainty, prediction and control. In a contemporary context, both are reactions to or mirror images of post-modernism. For those in power, audit appears to present the ability to control the post-modern world. The fact that the approach does not work merely leads to its further reinforcement. Thus, the details of audit change frequently, often with the second or even third change being introduced before the first one has properly bedded in. Sometimes, as Stronach and Morris (1994) argued, these frequent changes include actual policy reversals, as what is required in one year is prohibited a few years later. For researchers wedded to the new positivism, the reassertion of the old principles of objective method is a mantra to keep at bay arguments about reflexivity, post-modernity and the supposed abyss of relativism.

In this context, it was only a matter of time before governments began to insist on research that fitted the audit culture. Thus, in both the USA and the UK we have witnessed policy pressures for researchers to tell politicians ‘what works’, adopting the evidence-based practice approaches developed in medical science. This leads to the next parallel between audit and the new positivism. What policy makers do not

want is research that tells them education is messy and complex. Audit requires one of two things, and sometimes both. The first is a 'black box' view of processes, whereby if the outcomes are improving, so must be the complexities of what goes on inside that box. The second is a clear focus on a small number of single prime movers – key variables that can be changed in isolation, in order to improve the outcomes. That is, we change one or more of the inputs into the black box, measure the improvement in outputs and all is well (or at least better) in the world. The new positivism offers similar certainties. By holding all except one variable constant (leaving the black box unchanged) it offers apparent certainties about the impact of any measured change. In short, the new positivism offers politicians what they want and reinforces the audit culture of which it is part.

The result has particular significance for the nature of learning. The focus on measured outputs of learning largely presupposes what Sfard (1998) termed an acquisition view. As Hager (in press) argues, this assumes that learning is a product, which is acquired by the learner. The product may be knowledge, understanding or skills. However, we can determine what it is or what it should be in advance, plan for it to be acquired, and measure the success of the acquisition process at the end. The essential nature of the acquisition metaphor within audit and the new positivism lies in the assumption that the product (what is learned) is unchanged by the process of acquisition. It is, in that sense, separate from the learner, and is the same for any learner or group of learners. The learners may differ, but what is (to be) learned does not. This exactly parallels positivist assumptions about subject-object dualism in research, and leads to similar problems. If what is learned and the learner are separate, neither 'pollutes' the other. But if, as is argued below, learner and what is learned are integral to each other, standard measurable outputs become problematic.

At a more mundane level, we can see the impact of learning as product and learner/learning dualisms in many common approaches to education. It lies at the heart of assumptions that differences in learning can be explained by the differing speeds at which different people learn, and that learning (education) can be the same for all, if only we can either get people in the same place at the start of education, or give them effective treatment to remedy their defects. If thing don't work, this can rapidly lead to victim blaming – 'the learning is the same, if you can't achieve, it must be your fault'. It can also lead back to dangerous assumptions of genetic difference, for example as supposedly revealed in standardised IQ tests. It is also at the heart of another current English obsession – the assumption that education can teach the core skills needed for future employment. That is, skills have an existence separate from the person acquiring them and from the contexts in which they are learned and/or used. They are transferred from education to work 'inside' the person.

In order to further advance my argument that such a view of learning is privileged in the new positivism, I next need to step back and explore in more detail, one alternative view of what learning might be. I then examine the extent to which this alternative view of learning can be sustained within audit-driven positivism.

Learning as a cultural process of belonging

What follows, is a brief summary of a complex argument that I have developed elsewhere. It therefore entails significant self-referencing, with which I hope readers will show forbearance. The work was originally focussed in studies of workplace learning, and later reinforced by a research into learning in English Further Education

colleges. This view of learning entails combining the metaphors of participation and formation – learning as becoming. This view of learning entails the rejection of five common dualisms. All of these dualisms are retained within an audit-driven acquisition view of learning, and within new positivist research approaches.

Mind and Body

As Beckett and Hager (2002) argue, at least since Descartes there has been a deep-seated western tendency to see the mind and body as distinct, with the mind as superior. Thus, it is in the mind that human identity is thought to reside and, with regard to learning, propositional knowledge and intellectual ability are seen as the prime focus of and location for learning. Like Beckett and Hager I believe that this view of a person and therefore of learning is now untenable. All human activity is embodied, in the sense that we think, emote and practice as a holistic person. Writing this paper could be seen as a quintisentially rational/mental process, but I am writing using a computer (bodily practice) and my beliefs and interests in learning are coloured by and rooted in my partly tacit dispositions and emotional preferences (Bloomer, et al., 2004). Research data from the project investigating learning in English Further Education Colleges strongly supports the view that learning in educational settings is also embodied (Hodkinson et al., 2004). Accepting that learning is an inherently embodied process has significant theoretical and practical ramifications, which are under-represented within much acquisition literature.

The implications for the new positivism relate to what is assumed to be acquired, and how it can be measured. The scientific need for precision, and to separate out variables, often leads to a focus on, for example, knowledge or skills, rather than a

holistic personal (embodied) performance. This is linked to a much more fundamental problem. For if, as I am arguing, learning entails emotions and practice as well as thought, that which is learned becomes different for different learners, as each already embodied and emotional person engages with a new learning experience.

Individual and Social

Perhaps because of the dominance of psychology as a discipline in the learning literature, the conventional, 'standard paradigm' (Beckett and Hager, 2002) view of learning is as an individual phenomenon. Thus, a person learns in a social context, such as a classroom or workplace, which is external to them and separate from them. There are two reasons why this split between individual and social should be rejected. The first was the clear identification by Lave and Wenger (1991) that individuals are integral parts of the social and organisational contexts where they work and learn. Because of our western thought traditions, at least in Anglo-American thinking and in the English language, this integration of person and social context is difficult to grasp or express, and easy to slip away from. One difficulty is that no single person is completely synonymous with their working or educational context, even though they are part of it. Each of us has a life outside our current workplace, school or college. We had lives before it, we have lives in other contexts alongside it, and most of us will have lives after we have left. Furthermore, the ways in which one person is part of a working or educational context may be very different from the ways in which another person is part of the same context.

The second problem with seeing the individual as separate from the social is more fundamental, for to be an individual person is to be a social person. To be human is to

be socially positioned, with socially derived and constructed dispositions, and socially derived and constructed identities. Such social similarities and differences between learners in a particular setting are centrally important in understanding their learning. This can be expressed in terms of more structural issues such as gender, ethnicity or social class (see below); in terms of social interests, affinities, relationships; and in relation to positions and roles within the school or workplace itself, including employment relationships and divisions of labour (including within a classroom).

For me, the argument that any individual has to be understood as social is an extension of the argument for people to be seen as embodied. It follows that learning is inherently embodied and social. However, to say that learning is social must include the social individual.

If learning is social in both these ways, then, as Lave and Wenger (1991) argued, learning is also relational. That is, it is a mistake to separate out either learning or the learner from the contexts in which the learning takes place, as each is part of the other. 'Context' becomes a problematic concept, for what Hodkinson et al. (2004) term the learning culture of any location is multi-facetted, and the boundaries of any context are highly permeable. Those various facets are inter-dependent and interrelated. Thus, to slightly distort the Lave and Wenger (1991) argument, in any situation people learn to belong or not to belong, and through belonging (or not belonging) they change. Active participation within the culture of that location or, for some, active rejection of it, are parts of the process of learning as becoming. As will be argued in more detail below, the relational nature of such learning, and the intangible nature of many of the 'outcomes' of it, create fundamental problems for the

new positivism. Psychologists do claim to be able to measure some aspects of becoming, such as self esteem. But the problem then is the arbitrary separation out of a single such factor from the complex whole that is learning. In the audit culture there is a second risk. With the focus on acquired content, many issues of becoming are bracketed off as 'noise'.

Structure and Agency

Within sociology, the relationship between structure and agency is continually revisited, and remains partly unresolved. In essence this is an on-going debate about starting points. For structuralists, human actions are largely determined by the social structures that people inhabit. From a more agentic perspective, people's own perceptions and actions govern their interrelationships with other agents, and with the social structures that they inhabit. Yet, though we may argue about their relative importance, both agency and structure strongly influence learning. Thus, from the agency perspective, actions that people take impact upon their own learning and on the learning of others that they interact with. In my work with Heather Hodkinson on teacher learning, we showed how actions and interactions by and between teachers co-constructed the cultural practices of the subject departments where they worked, in ways that directly influenced the ways in which they learned (Hodkinson and Hodkinson, 2003, 2004b). Furthermore, the dispositions, preferences and actions of individual teachers resulted in significant differences in learning between them (Hodkinson and Hodkinson, 2004a).

Social structures inter-penetrate all learning. Issues of social class, gender and ethnicity are interrelated with issues of school and work hierarchies, power

differentials, and social relations. Opportunities to learn are strongly influenced by such issues. However, in ways that directly replicate the individual/social dualism, it is not enough to think of people acting as agents within a separate structural framework. As Bourdieu (e.g. Bourdieu and Wacquant) argues, we do not simply inhabit such structures. Rather, they exist in us and through us. Thus, to use some of his terminology, people (learners) are structured through their positions in education, work and society, and through the dispositions that make up their habitus, which are developed through their positioned lives. At the same time, the fields within which people live and learn are themselves structured. Though often described separately, the structured nature of the person and the structured nature of the field are integral to each other. Both are inter-penetrated by and inter-penetrate what Bourdieu terms the field of power – the system of more macro social inequalities, supported by and supporting dominant elites – those who possess and in turn help define what counts as 'distinction' (Bourdieu, 1984). In relating structure and agency to learning we face an extension of the individual-social dilemmas. It makes no sense to think of learning without either agency or structure, or to think of either one as foundationally more important, or to think of the two as separate.

As with the other dualisms examined here, postpositivism tends to treats structure and agency as separate. Thus, measures of learning outcomes can be used to illustrate structural inequalities, for example by gender, class or ethnicity. Whatever their value in other ways, such studies implicitly see learning as an acquired product, and demonstrate differences in acquisition as the basis for their claims. Learner agency is bracketed off. As a consequence, such studies tell us relatively little about the processes of learning and can sometimes lead to deterministic conclusions. Far too

many other studies of learning bracket off the structural as background noise – to be acknowledged, at best. It is this latter view which is strongly promoted within the audit culture. The view of learning as acquisition remains, but without the insights that come from a structural understanding. A recent English initiative to improve the quality of teaching and learning in poor inner city areas has been the Academy schools. These are deprived schools that are given extra funding and a new identity, including commercial sponsorship. However, recent press reports suggest that most of these schools remain amongst the poorest, judged against league table measures and academic achievement. There are two implicit and mutually reinforcing policy mistakes here. The first is to see learning as acquisition and the second to ignore the effects of social structure on learning.

Process and Product

A recent special issue of the *Cambridge Journal of Education* (vol 35, no 1, March 2005) focused on the teaching and learning of mathematics. One thing that differentiated the contributors from some other writers about learning was their dual focus on both the product of learning (in this case the mathematics curriculum) and the processes of learning, including ways in which teaching can enhance those processes. The acquisition view of learning, as reinforced by audit and the new positivism, assumes that process and product are independent of each other. The first step is to identify what the product is, or should be, and the second is to identify the most effective (or, increasingly, most efficient) way of transferring that product into the learner. By focussing on the relationship between the content of the mathematics curriculum and the processes of learning mathematics, the contributors to that issue undermined any such simplistic view, and pointed towards the alternative explanation,

that process and product are intimately intertwined. The weak version of this argument is that process and product are dialectically related. The stronger version, which I favour, is that they are integrated. The process is the product and the product is the process.

Just as the processes of learning are social, cultural and value-laden activities, so is the content or product of learning, such as the mathematics curriculum. The social, cultural and political pressures upon product and process at any point of time are similar, for both are positioned within the same social, cultural and political setting.

There was evidence within the Issue of other ways in which process and product are interrelated. Several authors contrasted a technical view of both with a wider more social view. Petocz and Reid (2005) were explicit about what they meant by technical. For them, this entails seeing the mathematics product as separate commodities – what they term 'individual techniques and components', where the learning process consists simply of mastering and applying those techniques – i.e., process and product are separate, but linked through acquisition. They contrast this with what they term a broader and more holistic view, where the product is mathematics as an approach to life, and the process entails understanding mathematical ways of thinking. Others made explicit the implications for learning processes. Arzarello et al. (2005) argued that particular pedagogical processes can strengthen the understanding of mathematics, through focussing on particular types of embodied classroom practice, using artefacts as instruments. They used an example of developing mathematical thinking through three stages, based upon Homer's story about Penelope's knitting, which is very different from the learning and using

algorithms approach favoured by those with a more technical view. The implicit metaphors of learning they use are participation and construction, not acquisition.

Other contributors explore the links between process and product in different ways. Van den Heuvel-Panhuizen (2005) argues that decisions about product cannot be derived simply from decisions about process, or vice versa, for neither process nor content are independently superior to the other. She goes on to show how decisions about content and pedagogy can and should be taken in an integrated way. Bills and Husbands (2005) are concerned about the significance of values, in both the content and process of mathematics education, through what she describes as inculcation and influence. Runesson (2005) sees process and product as parts of understanding learning within a wider discourse. She does this by arguing that we should focus on the product of learning as socially enacted in classrooms, not externally given. Walshaw (2005) sees gender as interpenetrating both process and product.

Formal and Informal Learning

Another equally troubling dualism in the learning literature is that between formal and informal learning. Despite the almost ubiquitous presence of this dualism in literature about learning, there is neither broad agreement about what the distinguishing characteristics of formal and informal learning are, nor any foundational argument upon which such criteria could be based. There are three inter-locked arguments. One is that formal learning is what happens in educational establishments, whilst informal learning takes place 'in everyday life'. The second is a distinction between learning processes. Thus, 'formal' learning might entail control by teachers, curriculum structures and assessment requirements, with a focus on planned and

deliberate learning, often of propositional knowledge. 'Informal learning' entails the opposite. It is part of everyday practice, often tacit, entails doing more than knowing, etc. Thirdly, informal learning (or education) is sometimes seen as being led and controlled by the learner, and therefore more democratic, whereas formal learning (or education) is controlled by a teacher and/or other external agencies.

One problem is that, as Billet (2002) argues, all learning can be seen having formal features. Colley et al. (2003) went further, arguing that all learning entails differing combinations of what they term attributes of formality and informality. By 'attributes', they mean that people, often researchers, attribute labels of informal and formal to aspects of learning. Hodkinson and Colley (in press) point out that much learning in educational settings is 'informal'. This includes, for example, learning related to what Jackson (1968) memorably termed the 'hidden curriculum'. On the other hand, learning in the workplace is influenced by what can be seen as more formal attributes. For example, much workplace learning is initiated and influenced by managers and employers rather than the workers themselves, and is increasingly specified and assessed – for example through staff development and performance management schemes, through targets and management induced changes to organisational working practices.

Thus, like the other dualisms listed, both what is termed formal learning and what is termed informal learning need to be held always in view, for in practice they are integrated. The problem for audit and the new positivism is that they almost exclusively focus on limited aspects of formal learning. Such studies focus on the

achievement of intended learning outcomes, be this knowledge and understanding in schools, or skills and competence at work.

When these five dualisms are integrated, the result is a view of learning very different from acquisition. Learning is seen as cultural and relational. Learners are embodied and social. Context and individual, structure and agency are interpenetrating. Learning is seen as becoming, through participation. The process and products of learning are inseparable, and much learning in all settings is 'informal', thought strongly influenced by aspects of what is often labelled formality.

One further significant point then follows. As Bills and Husbands (2005) suggest in relation to the learning of mathematics, issues about what counts as learning and what counts as 'good' learning are contested value judgements, not matters of either empirical or technical determination (Hodkinson et al., 2004). For example, once 'informal' learning is acknowledged, many significant learning outcomes are likely to be judged undesirable by many. Examples might include learning to be a more effective criminal in prison, or learning racist or sexist beliefs. Officially driven audit approaches routinely make contested assumptions about the value of learning. One is that the most important outcome from a school or college course is the acquisition of the prescribed skills, knowledge and understanding, and the achievement of the qualification. The fact that young female nursery nurses learn to reinforce their gendered inequality, or that other students learn that they do not want to finish the course, are factored out of the equation. This is a classic example of the problem of technical rationality – the focus is on efficiency, not purpose.

In the next section, I examine why audit-driven new positivism finds the view of learning as becoming advanced here very difficult to get to grips with.

Measuring the unmeasurable

There are three parts to the argument in this section. Firstly, I examine problems of measuring outcomes in relation to learning in the workplace. Next, I argue that very similar problems arise when examining learning as becoming in schools. Finally, I focus on issues of reductionism versus relationalism.

In the year 2000, I was a member of a newly funded research network, investigating learning in a range of different workplaces. This was part of the first phase of a major UK research programme. The then steering group and Director of that programme, since replaced, funded the network conditionally. In striving to meet the conditions, a particularly difficult argument focussed on the need for clearly identifiable learning attainments. The Director suggested strongly that we needed to be able to specify in advance what sorts of learning attainment we were looking for, so that we could establish clear research procedures to identify them in the field. There were several reasons why we could not do this. For example, we did not know what sorts of learning outcomes we might find in the workplaces we were studying. There was no formal curriculum to guide us. In practice, we often worked in reverse of the Director's assumptions – identifying things that workers could do, and then exploring how they learned to do them. From this perspective, identifying learning attainments amounted to little more than producing, through research, a realistic job description.

A related problem was that the workers themselves did not think of what they did as 'learning'. As suggested earlier, talking with us proved to be a learning experience, as they came to recognise many of their regular working practices as learning. We were constructing with and through these workers views of learning as informal, participatory and, I would now add, as about 'becoming'. In so doing, we encountered much learning that did not fit the acquisition metaphor. One teacher, for example, became progressively more peripheral in her school and subject department, and less self confident in her teaching ability. This was, for her, a highly significant and uncomfortable learning experience, which was both a process and an outcome. Much learning in the workplace was unintended and unintentional. When employers addressed such learning, for example through a performance development scheme, they actually changed its nature, by making it explicit and deliberate, rather than tacit and unintended (Hodkinson and Hodkinson 2004c).

The problem for those approaching workplace learning through the new positivism are similar. In specifying those outcomes (or attainments) that should be measured (or at least evidenced) in advance, they are actually changing and limiting the nature of what they investigate, even if they can find a way to research the issue without the subjects knowing what they are doing.

A linked problem is that to focus on measured outcomes, they need to reify them. Whether these are more conventional workplace outcomes such as skills, or more subtle outcomes such as self esteem or worker identity, they must become thing-like in order to be investigated in a postpositivistic manner. From an acquisition

perspective, this is relatively unproblematic – it is merely that one outcome is focussed on, and others bracketed off. But if learning is a process of participation and becoming, things are much more difficult. For example, 'becoming' is a process and an outcome – how can we use one to test the effectiveness of the other? The result of adopting such research approaches is often to implicitly predicate a view of learning as acquisition, where process is separated from outcome, and the outcome can be consistently measured.

Initially we thought that the methodological problems we were describing arose from the particular nature of workplace learning. However, two subsequent projects showed that the problem is just as great in so-called formal educational settings. The first of these has already been referred to. Colley et al. (2003) showed that the distinction between formal learning (school or college) and informal learning (workplace or community) was unsound. This was confirmed in the second study, researching learning in English Further Education Colleges (Hodkinson and James, 2003). This second project showed that learning in educational settings was every bit as complex and partly informal as was learning at work (Hodkinson et al., 2004).

Three brief examples will illustrate the point. On a high status academic psychology course, a significant minority of students learned that psychology was too difficult for them to learn, and that they could not cope with study at that level. This was not just that they failed to acquire enough psychology and examination expertise – they became less confident and 'knew' that psychology was beyond them. They had become different people, in relation to their studies of this subject. In a vocational course training nursery nurses, many of the young working class female students

became novice members of their targeted profession. They tacitly learned to dress differently, and to accept significant amounts of emotional labour as normal. In a drama course aimed at the least able young people, as well as learning that they could do drama and enjoy it, many students had their existing dependency on other adults with more power reinforced. (See Hodkinson and Colley, in press, for a fuller account of these examples). Just as in the workplace, these are examples of learning as becoming, where the process and outcomes are inseparable.

A further problem faced by the new positivists is that, driven by audit, there is a strong and widespread assumption that learning is and should be concerned with official intended outcomes – knowledge of psychology, the knowledge and skills necessary to be a nursery nurse; the skills to do drama. Such things are dominant in the discourse and relatively straightforward to identify and even measure. It is very easy for such research to completely overlook other sorts of learning, like those described above. When this is added to the difficulty of finding outcome measures for the unexpected, and the assumptions about the separation of product and process, acquisition metaphors resurface and/or remain unchallenged.

My final point is the most important. The view of learning adopted in this paper assumes complexity and relationality. Our research shows that when we take such a wide view of learning as becoming, there are no variables that are logically or empirically foundational. That is, there are no independent variables. Instead, each factor that can be teased out is strongly influenced by all the others. They are all (inter)dependent. Furthermore, learning in any setting is a complex amalgam of the unique and the more general. Such a view of learning poses deep-seated problems for

audit and the new positivism, in ways that acquisition views of learning do not. If learning is seen as a stable product to be acquired, then different processes of or conditions for acquisition can be readily tested out against each other, or even, where practically possible, against a control group. From my perspective, reductionism then becomes a central difficulty, as an acquisition view of learning is imposed.

Objectivity and Bias

I am not claiming that all empiricist and experimental research methods must adopt an acquisition view of learning. What I am arguing is that, especially in a climate of audit, there are very strong tendencies that push such research in the acquisition direction. Those tendencies include the audit emphasis on measured outputs from learning linked to value for money. They also include two prerequisites of the positivist method: (i) that clear objective measures of learning achievement can be identified and used to test the effects of changes other variables; (ii) the need to focus on one, or at least on a very limited number of variables, excluding others. These prerequisites can be justified within an acquisition view of learning. They are virtually untenable from some other standpoints, such as that adopted in this paper.

I have illustrated this problem by focussing on a particular view of learning that I am coming to develop and adopt – building on the work of many others. I naturally hope that those reading this paper will agree with many of the views about learning that I have expressed. However, such agreement is not central to my case. My argument is that if views of learning outside an acquisition metaphor, such as the one expressed

here, are to be considered within the research community, then the new positivism has as serious problem, because of the difficulties it has in addressing them.

The result of these difficulties is the paradoxical position identified in the opening of this paper. For by focussing on the need for 'objective' methods, new positivist researchers are adopting a biased position, which tends to favour one view of learning – acquisition – above some others. With regard to learning, such methods represent a biased objectivity, or an objective bias.

To many qualitative, interpretative or hermeneutical researchers, this paradox comes as no great surprise. It is simply an example of what Gadamer (1979) argued so long ago: method does not of itself bring truth. What follows is that arguments about research methodologies are also arguments about what learning is and what education is. As I have previously argued with John Smith, judgements about research methods are political judgements – with a small and a large 'p' (Smith and Hodkinson, 2005).

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