Knowledge, Power and Educational Reform

Applying the sociology of Basil Bernstein

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3 On knowledge structures and knower structures

Karl Maton

Basil Bernstein (1977, 1990, 1999) shows how structures of knowledge in intellectual and educational fields specialize discourses and actors in ways that have structuring significance for those discourses and actors as well as the fields of social and symbolic practice they inhabit. Using the concepts of educational knowledge codes, the pedagogic device and knowledge structures, Bernstein's framework helps reveal the effects of the structuring of pedagogic and intellectual discourse for social relations, organization, disciplinary and curricular change, and identities (Singh 2002, Moore 2004a). In this chapter I suggest that exploring *knower structures* develops these insights further, opening up new and fruitful possibilities for research. Using the concepts of legitimation codes, the epistemic device and knower structures, I shall build on Bernstein's framework to add a second dimension to understanding intellectual and educational fields.

My specific focus is how knowledge and knowers are specialized or, put another way, what makes some ideas, texts, actors, groups or institutions special or appear to partake of the sacred, and others profane. Such questions of knowledge and identity are central to social and intellectual change. In 'knowledge societies' experiencing exponential growth in the volume, complexity and sources of information and where growing demand beyond the academy for more knowledge to ameliorate the uncertainties of everyday life accompanies a loss of public trust in 'expert' knowledge (Muller 2000), issues of *who* knows *what* and *how* have become crucial far beyond the academy. At the same time, within higher education increasingly marketized funding regimes encourage the proliferation of publications, while credential inflation threatens to expand research student numbers. These developments make the tasks of determining what constitutes an original contribution to knowledge, who is a scientist or a sociologist, or what article is worth reading, recurring threads running through the everyday lives of academics. Questions of the basis of claims to be heard, recognized, published or resourced are thus far more than philosophical speculation or epistemological ground-clearing.

In this chapter I discuss how using Bernstein's analysis of curricular and knowledge structures can help shed light on the ways such questions of the specialization of actors and ideas are answered. I will also show how focusing on the role played by knower structures augments and develops these insights.

In Bernstein's work the latter represent a kind of shadow structure, implicit within the theory but not explicitly foregrounded, conceptualized and elaborated. Here I shall show what bringing knower structures into the light and making them an integral part of the analysis can offer. At the same time I shall illustrate and develop the concepts of legitimation code and epistemic device that are being used elsewhere to analyse institutional, disciplinary and pedagogic formations.[1] I am thus setting forth a way of thinking about intellectual and educational knowledge using some simple tools that researchers are finding useful to think with. I do so by briefly discussing two different substantive research projects I am using these tools to think about, which examine intellectual and educational fields. First, I address fields of knowledge production by discussing the famous 'two cultures' debate about relations between science and the humanities that erupted during the early 1960s. Second, I focus on fields of knowledge reproduction by discussing the early findings of exploratory research on the school curriculum that asks why comparatively few children choose to take qualifications in Music.

Knower structures in intellectual fields: the 'two cultures' debate

In 1959 C.P. Snow gave a lecture in which he claimed that the intellectual life of 'the whole of western society' was increasingly being split into 'two polar groups' that 'had almost ceased to communicate at all' with 'between the two a gulf of mutual incomprehension – sometimes ... hostility and dislike, but most of all lack of understanding' (Snow 1959: 3, 2, 4). These 'two cultures' were quickly associated in the ensuing debate with the humanities and science and the debate itself construed as a struggle over which of the two could lay claim to the title of 'culture' and so status in the academy. Though the idea that intellectuals were divided into rival cultures had been made before, it is difficult to overestimate the ferocity and intensity of the debate which raged following the publication of Snow's lecture – as Snow put it, 'a nerve had been touched' (1964: 54). The debate quickly became famous and remains widely discussed; indeed, current discussions of 'two cultures', relations between science and the humanities, and the position of social science, all remain deeply indebted to the grounds established by this original debate.

The answer to why such a well-established portrait of the disciplinary map aroused such passion can be found within the public pronouncements of contemporary participants in the debate.[2] Common across positions in the debate was a striking picture of contrasting fortunes. On the one hand, what Snow termed 'scientific culture' was portrayed as enjoying a meteoric rise in stature; as one commentator tartly expressed:

> You cannot open a newspaper, let alone the 'quality' journals, without the importance of science and technology being trumpeted at you from the headlines.
>
> (Morris 1959: 374)

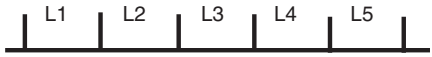
By the late 1950s the term 'science' had about it something of the sacred: 'for non-scientists it is magic' (Allen 1959: 67). Fêted by and enjoying massive funding from industry and the state, revered by the media and worshipped by the public, scientists were said to be enjoying unprecedented prestige. In contrast, the humanities were portrayed as embattled, in decline and insecure. An influential collection of essays entitled *Crisis in the Humanities* (Plumb 1964), for example, included accounts of proclaimed crises within classics, history, philosophy, divinity, literary education, sociology, the fine arts, and economics, as well as the humanities in schools. They were said to be unwanted by better-quality students, considered irrelevant to a modern economy by industrialists, increasingly excluded from the corridors of power by politicians, no longer considered the repository of culture, and publicly ridiculed as offering little genuine knowledge. In short, while scientists were feeling strident and secure, humanist intellectuals were suffering from shattered self-confidence. The contemporary view of the disciplinary map, therefore, portrayed a fundamental shift in the balance of power between humanist and scientific cultures in their long-acknowledged struggle for status and resources. This raises two questions that I shall explore in turn: (1) What was the basis of their differences?; and (2) Why was this shift of power occurring? A common contemporary explanation of their differences held that scientists and humanist intellectuals 'speak different languages' (Editorial, *The Listener,* 3 September 1959b: 344). Using Bernstein's approach would suggest it was instead the *underlying structuring principles* of their languages that were different. I shall explore these principles in terms of knowledge structures and then knower structures, before illustrating how an analysis incorporating both can shed light on what was underlying this changing disciplinary map.

Knowledge structures

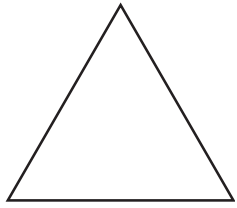
Analysing the form taken by knowledge in intellectual fields of production, Bernstein (1996, 1999) distinguishes first between horizontal discourse (everyday or 'commonsense' knowledge) and vertical discourse (scholarly or professional knowledge) and, second, within vertical discourse between horizontal and hierarchical knowledge structures. These different forms of knowledge structure can be used to describe the two cultures.[3] Beginning with the humanities, humanist culture was portrayed by participants in the debate as riven by competing claims for supremacy between strongly bounded disciplines. Commentators argued that classics had served as the basis of a 'common culture' or 'unifying force' (Lee 1955) and its decline was leaving a hole at the centre of the humanities; what had been a single, organic culture was fragmenting into a series of rival subcultures, with little dialogue across disciplinary boundaries and no means of adjudicating between competing claims to be the new unifying centre. Humanist culture thereby resembled what Bernstein defines as a *horizontal knowledge structure:*

> a series of specialized languages, each with its own specialized modes of interrogation and specialized criteria ... with non-comparable principles of description based on different, often opposed, assumptions.
>
> (Bernstein 1996: 172–3)

A horizontal knowledge structure comprises a series of segmented, strongly bounded languages which, developing Bernstein (1999: 162), I shall visually represent as:



Where humanists were said to be riven by disagreement, and thought and acted differently, proponents of scientific culture claimed scientists comprised an organic community; as Snow put it, scientists shared 'common attitudes, common standards and patterns of behaviour, common approaches and assumptions' (1959: 9). Unlike the pluralized humanities, science was often referred to in the singular and portrayed as integrated and whole. Though science was proliferating specialisms at a rapid rate, scientists were said to know how to bring them together; they understood 'the essential principles' (Halsey 1962) and so were able to generate new knowledge without splitting into competing factions. Scientific culture thereby resembled what Bernstein describes as a *hierarchical knowledge structure:* 'an explicit, coherent, systematically principled and hierarchical organization of knowledge' which develops through the integration of knowledge at lower levels and across an expanding range of phenomena (1996: 172–3). This Bernstein represents as:

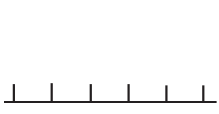
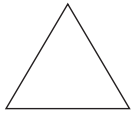
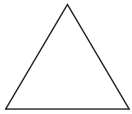


where the point of the pyramid represents the smallest number of axioms or theories and the base represents the maximal number of empirical phenomena explainable by these propositions.

Knower structures

Using Bernstein's concepts enables the form taken by the knowledge structures characterizing the two cultures to be described. If we now turn to look at each culture again but in terms of their knower structures, it shows a different picture (see Table 3.1). I described how the humanities were portrayed as having previously been a 'common culture' with the classics at its centre

Table 3.1 The 'two cultures' as knowledge structures and knower structures

	Humanist culture	*Scientific culture*
Knowledge structures		
Knower structures		

serving to integrate and bring the various disciplines into relation. However, it was not classics understood as knowledge, techniques, skills or procedures that formed the basis of this integration but rather the dispositions or 'gaze' that an education in classics was said to guarantee. The ideal humanist intellectual was a gentleman amateur who pursued (usually) his studies 'for the love of it', viewing them as secondary to a clerisy role of cultivating the cultured sensibility of the 'English gentleman' among students selected on the basis of fitting in with the character of the university (Maton 2004). Everything focused on the personal attributes, sensibility or character of the knower and an education in classics served as shorthand, indicating this requisite *habitus.* It was in effect a cultural veneer for a tacit social hierarchy by being associated with specific social and educational backgrounds (historically, upper-class, public school and Oxbridge). In other words, the humanities represented what I shall define as a *hierarchical knower structure:* a systematically principled and hierarchical organization of knowers based on an image of an ideal knower which develops through the integration of new knowers at lower levels and across an expanding range of different dispositions.[4] As shown in Table 3.1, this can be portrayed as a pyramid of knowers with, in the case of humanist culture, the ideal of the 'English gentleman' at its pinnacle. The recontextualizing principle of the humanities and its ruler (in both senses) was thus a *knower;* this idealized knower served as the basis for the selection of actors and ideas and their recontextualization into the field's hierarchy of knowers.

Where the humanist intellectual's 'ability is a personal matter, which on the whole he does not owe to his advanced training', scientific knowledge was widely portrayed as 'fairly independent of the personal merits of its possessor' (Gellner 1964: 75–6). Proponents of science claimed that *anyone* could enter the sacred. Snow compared scientific culture as a democratic and meritocratic endeavour to the class-bound patronage and social snobbery of humanist culture and claimed science was blind to colour, race, creed; it cut 'across other mental patterns, such as those of religion or politics or class' (1959: 9). In

short, anyone could do science so long as they followed the correct scientific procedures. Scientists could, therefore, have very different social backgrounds and sensibilities because these did not matter. Science was thus portrayed as what I shall term a *horizontal knower structure:* a series of strongly bounded knowers, each with its own specialized modes of being and acting, with non-comparable habituses or embodied dispositions based on different social backgrounds or experiences. In science, according to its proponents, each type of knower could be strongly bounded from other knowers such that scientists could represent a series of segmented knowers (see Table 3.1), each 'gaze' strongly bounded from one another and capable of being based on very different, even opposed, assumptions.

Exploring these knower structures highlights something not immediately obvious from studying knowledge structures alone: it is not only hierarchical knowledge structures that have a hierarchy. As illustrated in Table 3.1, hierarchical *knower* structures also possess a systematic principle for arranging actors and discourses into a hierarchy. The difference between intellectual fields may thus be less whether they are hierarchical or not and more where their hierarchizing and recontextualizing principle lies: in the knowledge structure or in the knower structure (or in both). I should emphasize that 'knower structure' does not add a 'field of positions', as Bourdieu (1993) would put it, to the knowledge structure's 'field of stances'. The analysis remains focused on what Bernstein (1990) termed 'relations within' rather than 'relations to' knowledge (see Chapter 2, this volume). Analysing knower structures simply reveals another dimension to the knowledge formation. To explore this more concretely, I shall now examine how actors and discourses were related to each of these two structures in the 'two cultures' debate using the concept of legitimation codes.

Legitimation codes

The notion of legitimation codes is based on the simple idea that actors are not only positioned in both a structure of knowledge and a structure of knowers but also establish in their symbolic practices different forms of relations to these two structures. One can thereby analytically distinguish between an *epistemic relation* (ER) to the knowledge structure and a *social relation* (SR) to the knower structure.[5] Each of these relations can exhibit relatively stronger (+) or weaker (–) classification and framing. Varying their strengths for each relation independently generates four principal codes: $ER^{+/-}$, $SR^{+/-}$ (where 'ER^{+}', for example, condenses '$^{+}$C, $^{+}$F of epistemic relation'). In other words, actors may emphasize the knowledge structure, the knower structure, neither or both as the basis of distinctiveness, authority and status; conversely, their identity, relations and consciousness are shaped in different ways by these two kinds of structures. These legitimation codes represent different 'settings' of the epistemic device, the means whereby intellectual and educational fields are maintained, reproduced, transformed and changed (Moore and Maton

2001). Whoever controls the epistemic device possesses the means to set the shape of the field in their favour, making what characterizes their own practices (in terms of legitimation codes) the basis of status and achievement in the field. This brief and somewhat formal definition of these concepts can be fleshed out by considering the different ways in which the two cultures established relations to their knowledge structures and knower structures.

Perhaps the most controversial claim Snow made in his lecture was that science and not the humanities was the *true* 'common culture': 'the scientific culture really is a culture ... Without thinking about it, they respond alike. That is what a culture means' (1959: 9, 10). The basis of this culture was scientists' 'sense of loyalty to an abstraction called "knowledge"' (Mackerness 1960: 15), commitment to 'truth' (Bronowski 1961) and allegiance to their discipline (Pakenham 1963), which specialized their identity and claims to insight. In other words, for science the epistemic relation to its knowledge structure was central to the field; this structure strongly classifies and frames actors and discourses within the field (ER^+), while the social relation to its knower structure was less significant (SR^-): what I have elsewhere defined as a *knowledge code* (see Table 3.2), which is predicated upon the rule 'What matters is what you know, not who you are'.

In the case of the humanities, knowledge itself mattered a lot less; possession of procedures and skills was relatively unimportant in defining identity and achievement, so the epistemic relation to its knowledge structure was weakly classified and framed (ER^-). Instead, the basis of specialization was possessing the right kind of dispositions or character. In other words, the field strongly classifies and frames knowers (SR^+); for the humanities, the social relation to its knower structure was the key to the field – a *knower code,* predicated upon the rule that 'What matters is not what you know but who you are'. Comparing the two cultures in Table 3.1 shows that it is that which is hierarchical (the pyramids) that strongly classifies and frames actors and discourses within the intellectual field (in bold type in Table 3.2): the epistemic relation to the knowledge structure for scientific culture and the social relation to the knower structure for humanist culture.

Having conceptualized the two cultures in terms of their knowledge structures and knower structures and brought these together as legitimation codes,

Table 3.2 Legitimation codes of specialization for the two cultures

	Humanist culture	*Scientific culture*
Epistemic relation (to knowledge structure)	$^-$C $^-$F	$^+$**C,** $^+$**F**
Social relations (to knower structure)	$^+$**C,** $^+$**F**	$^-$C $^-$F
Legitimation code	knower code	knowledge code
	(ER^-, SR^+)	(ER^+, SR^-)

Note: Classification (C) refers to relative strength of boundaries *between* categories or contexts; framing (F) refers to relative strength of control *within* these categories or contexts; ER/SR refers to epistemic relation and social relation; '+/–' indicates relatively stronger/relatively weaker.

we can now return to the two questions raised earlier: the basis of difference between the two cultures and reasons for the shift of power between them. First, the debate can be redescribed as a struggle for control of the epistemic device between fields characterized by contrasting rulers or measures of achievement (legitimation codes). These different codes characterize the kind of resources or capital actors bring to the struggle: a struggle here between 'who you are' (knower code) and 'what you know' (knowledge code) as measures of status. It is little wonder that between the two was said to lay 'a gulf of mutual incomprehension'. Moreover, the rise of science and the proclaimed crisis in humanities are intimately interrelated: rising status for science threatened to change the basis of the distribution of resources and status within the field and relegate humanists to second-class citizens. If scientists controlled the epistemic device, then the field would tilt in their favour by making a knowledge code the basis of achievement.

Second, the difference in codes also suggests reasons for why this shift in power seemed imminent. One reason lies in the different relationships the codes establish between their knowledge formations and horizontal discourse (or everyday knowledge). As discussed, science was portrayed as specialized by its language rather than its speakers: who was speaking was said to be less important than what they were talking about and how. The mathematization of science from the seventeenth century onwards had made this language progressively different to commonsense understanding, making *discursive distance* from the contents and form of horizontal discourse the basis of the specialization of science. The scientist B.C. Brookes, for example, claimed 'it will never be possible' to translate between the two and that 'the learning of science is the learning of a *first,* not a foreign, language' that needed 'lengthy and ruthless indoctrination' (1959a: 502–21, 1959b: 783–4). Measured in terms of its knowledge code, science was thereby becoming ever more specialized in relation to horizontal discourse.

In contrast, the knower code basis of identity and status in the humanities made *dispositional distance* the basis of status; i.e. the distinction between the dispositions of humanist knowers and those of the laity, rather than the possession of specialized knowledge and skills. In these terms the position of humanists was being undermined on two fronts. First, expansion was bringing more varied knowers into higher education, presenting challenges to its hierarchy of knowers; maintaining the code depended on successful accommodation of different dispositions. Second, when judged by the discursive distance of science's knowledge code, the humanities were becoming less special. The extension of literacy under educational expansion was giving birth to 'the articulate society' where everyone felt entitled to speak and in which the 'clerk is a nobody not merely because he is not a scientist, but also because in the developed societies *everyone* is now a clerk' (Gellner 1964: 78). The humanities did not involve learning specialized procedures or skills – there 'is no enormous discontinuity, a yawning gap, bridgeable only by prolonged training'; instead one could pick up a discipline 'simply by soaking in the

ambience' (Gellner 1964: 70) – and so were vulnerable to being viewed as little more than a convoluted or jargon-ridden form of everyday understanding. As the historian Asa Briggs had complained:

> Everyone feels entitled to judge, even to condemn, and to say, for example, with Henry Ford that 'history is bunk'. This is a charge which few men-in-the-street would care to make against physics or chemistry.
>
> (Briggs 1956: 55)

In summary, the two cultures exhibited different legitimation codes, the debate represented a struggle for ownership of the epistemic device, and the state of play in this struggle was being affected by the different relationships each code established with lay knowledge and knowers. In his paper on knowledge structures, Bernstein (1999: 166) states that a field and its discourse are interdependent and interrelated and must be analysed together; the analysis presented here illustrates how they relate together in specializing identity and achievement within intellectual fields. That is, thinking in terms of how both knowledge and knower structures specialize actors, and how discourses can shed light on the different things they define as marking what is sacred and what is profane, the way they establish different relations between their sacred and profane, and the possible effects this may have for intellectual fields. I shall now use this simple idea to look at a different context: the school curriculum.

Knower structures in educational fields: Music in the school curriculum

Thus far I have focused on fields of knowledge production; in terms of educational fields of reproduction the notion of knower structures can be illustrated by returning to Bernstein's paper on classification and framing (1971) where he describes *inter alia* how educational knowledge codes shape educational identities. Bernstein identifies two codes as being predominant in educational systems: a collection code of relatively stronger boundaries between subject areas and control in pedagogy; and an integrated code of relatively weaker boundaries and control. Exploring the ways in which these shape identity and consciousness, Bernstein describes how collection codes emphasize educational knowledge, producing a 'clear-cut and bounded' or 'pure' educational identity based on one's academic subject ($^{+}$C,$^{+}$F), while in integrated codes the role of disciplinary knowledge in shaping one's educational identity is less clear-cut, more complex and must be constantly negotiated ($^{-}$C, $^{-}$F). From the perspective being advanced in this paper, one can describe this analysis as coding the way *educational knowledge structures* (such as a curriculum) specialize actors and discourses (ER$^{+/-}$). Just as for intellectual fields, we can additionally focus on the role of the *educational knower structure* and code its influence on specialization (SR$^{+/-}$). As I shall emphasize, it depends

on the empirical context under investigation but it is likely that in contexts characterized by a collection code curriculum the significance of a knower's dispositions is diminished ($^{-}$C, $^{-}$F), while in integrated codes there is more space for knower dispositions to play a greater role in the negotiation of identity and consciousness ($^{+}$C, $^{+}$F), whether these dispositions are seen as 'natural', inculcated or resulting from one's social position (depending on the model of the knower).[6] In other words, examining the knower structures of collection code and integrated code curricula reveals unexpected strengths of classification and framing. If we consider Bernstein's original formulation as coding the epistemic relation and these unexpected readings as coding the social relation, then it is clear they represent a knowledge code (ER^{+}, SR^{-}) and a knower code (ER^{-}, SR^{+}) respectively.

In short, I am suggesting that there are two dimensions of educational contexts (knowledge structures and knower structures), that relations to both can be coded (using classification and framing), and that bringing these two modalities together gives the legitimation code. I stated above that this code depends on the actual example under investigation because the modalities characterizing the epistemic relation to the knowledge structure and social relation to the knower structure may vary independently of each other. The inverse relationship between knowledge structures and knower structures in the example of the two cultures (see Table 3.1) is not always necessarily the case; one can, for example, envisage a collection code knowledge structure which also exhibits strong boundaries around and control over knower dispositions (i.e. one characterized by a hierarchical knowledge structure *and* a hierarchical knower structure). Varying the relative strengths of classification and framing for the epistemic and social relations generates four principal legitimation codes (see Figure 3.1). This generates further possibilities than those already encountered. Analysing the knower structure and integrating this with an analysis of knowledge structure within the concept of legitimation code thereby expands the range of possible phenomena brought within the theory. I have already discussed:

- *knowledge code* (ER^{+}, SR^{-}), which emphasizes possession of specialized knowledge, skills or techniques; and
- *knower code* (ER^{-}, SR^{+}), which foregrounds dispositions, whether 'natural', cultivated or related to social background.

In addition, one can also identify:

- *relativist code* (ER^{-}, SR^{-}), where one's identity and consciousness is ostensibly determined by neither knowledge nor dispositions, a kind of relativist 'anything goes'; and
- *élite code* (ER^{+}, SR^{+}), where legitimate insight and membership is based not only on possessing specialist knowledge but also having the right kinds of dispositions.

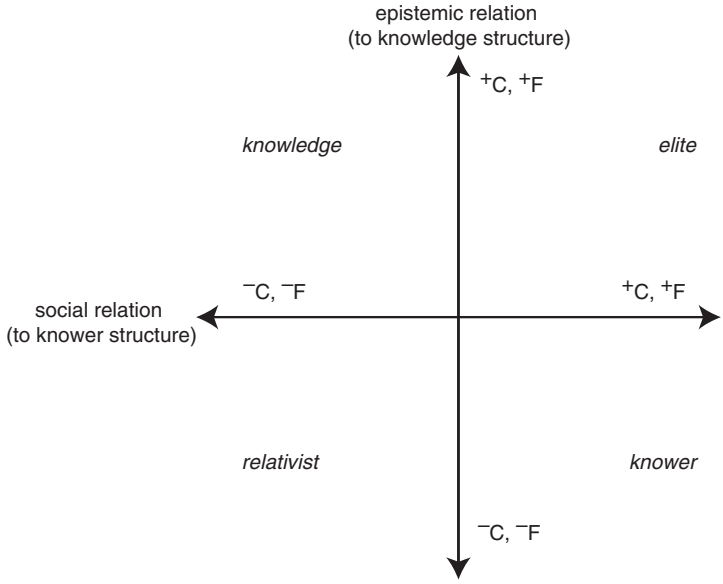


Figure 3.1 Legitimation codes of specialization

This conceptual framework thereby explores not only the strength of boundaries and locus of control but also what those classification and framing strengths are of. Put crudely, it asks what the entry requirements are to being considered legitimate, offering a legitimate performance or showing legitimate competence: is it knowledge, dispositions, neither or both? I have already discussed two of these codes. To explore the value of this generative theorization I shall now focus on the élite code by briefly discussing empirical research using these concepts to look at the problematic position of Music in the curriculum.

Music GCSE: an élite code?

There is something rotten in the state of Music in English secondary schools. Concern over its current status led to the launch in July 2004 of a 'Music Manifesto' by the British government that aims to champion the status of the subject and encourage more young people to remain involved in music making. In school the problem is that though Music is very popular among pupils up to the end of Year 9 (age 14) (Lamont *et al.* 2003) there is exceedingly low uptake for GCSE qualifications: approximately 7 per cent of children choose to take GCSE Music, compared to 38 per cent for History, 38 per cent for Art and Design, and 15 per cent for Drama.[7] The question this raises is why Music GCSE is so comparatively unpopular. So far little research has directly and systematically addressed this issue. Most studies of Music focus on the

learning and playing of musical instruments in formal and informal settings outside school; Music in the school curriculum is typically described as simply being 'out of touch' or viewed as irrelevant by most children (e.g. Green 2001, Sloboda 2001). Research that focuses on school Music, including the limited number of studies on the GCSE problem itself, describe it as problematic but offer speculation or ad hoc, piecemeal and largely descriptive accounts of best practice (e.g. Bray 2000, Harland *et al.* 2000). This lack of explanation represents the starting point for a collaborative, interdisciplinary research project using the conceptual framework presented here. I shall report very briefly on the early stages of this research, focusing on two pilot studies: (i) an analysis of attainment targets and programmes of study set out in curriculum documents and syllabi for Music; and (ii) a survey of pupils' perceptions of a range of academic subjects including Music.[8]

Curriculum documents

The first study analyses the content and language of levels of achievement expected of pupils at different Key Stages, as expressed in National Curriculum attainment targets and programmes of study, and in the GCSE syllabi of major examination boards. These have been analysed in terms of whether they focus on and emphasize: skills, techniques and knowledge; knower dispositions (such as aptitude, attitude, personal expression); neither; or both. Preliminary analysis suggests that the legitimation code changes for different Key Stages through the curriculum. In Key Stages 1–2 (ages 5–11) there is an emphasis in the documents on the pupil's personal expression and inner attributes above all else. For example, at the end of Key Stage 2 (age 11) pupils are expected to be able to 'develop their own compositions ... with increasing personal involvement, independence and creativity' (DfES/QCA 1999: 18) – a knower code. In Key Stage 3 (ages 11–14), the emphasis shifts as issues of aptitude, attitude and personal engagement are replaced by a focus on the demonstration of skills and possession of knowledge. The attainment target here emphasizes, for example, that pupils should show an 'increasing ability to discriminate, think critically and make connections between different areas of knowledge' (DfES/QCA 1999: 20) – a knowledge code. Crucially for our focus here, a second change of code occurs at GCSE level (Key Stage 4). Examination syllabi for GCSE require both personal expression *and* technical skills and knowledge. For example, for the syllabus of the examination board Edexcel, pupils are required to include a solo musical performance which is assessed for being both 'accurate and fluent' and 'an expressive performance that is generally stylish', with equal emphasis on technical accuracy and personal interpretation – an élite code. These preliminary results suggest a possible reason for low uptake worthy of investigation to be this move from knowledge code at Key Stage 3 to élite code at GCSE, one which is not merely a shift of code (as also occurs between Key Stages 2 and 3) but one that becomes doubly demanding: it is not enough one be knowledgeable, one must also possess the requisite dispositions.

Pupils' perceptions

The second part of this pilot study is a survey of children's definitions of the basis of success in different academic subjects. The survey was constructed to explore pupils' attitudes towards a range of school subjects, using the four codes as potential responses. Pupils were asked about Music alongside the core curriculum subjects of English, Mathematics and Science and the comparison subject of History, to compare their responses across a range of different school subjects. The questionnaire was administered to 912 pupils aged 8–14 from school years 4, 6, 7 and 9 at four comprehensive schools (all of average size and average achievement rating) in the north-east and south-east of England between March and May 2004. For each subject children were asked to: (i) rate the significance of being good at the subject; (ii) rate their own ability compared to their peers; and (iii) describe the basis of success at the subject. I shall focus on the last of these here. For all five subjects, children were asked 'What do you think makes someone good at [the subject]?'; four possible responses were provided, of which one only could be chosen:

[A] Anyone can do it, nothing special is needed
[B] You need to learn special skills or knowledge
[C] You need to have 'natural ability' or a 'feel' for it
[D] Only people with 'natural ability' can learn the special skills needed

It was designed for the responses to indicate a relativist code, knowledge code, knower code and élite code, respectively.

I shall briefly highlight two results from a preliminary descriptive analysis of the resulting data. First, taking the sample as a whole, the reasons for success in Science and the humanities were viewed differently by pupils: in Maths and Science (and Music) the modal response was that success required knowledge or skill, while the modal responses for English and History were that 'anyone can do it'. (Further work is required to explore this characterization.)[9] Second, among pupils who had already chosen their GCSE subjects in Year 9 (age 14), Music stood out from the other subjects in terms of the élite code response. Success in Music was far more likely to be viewed as attainable only by those with both natural ability and special skills than was the case for any other subject: 19 per cent chose this option for Music compared to a maximum of 3.6 per cent for the other four subjects (see Figure 3.2). This figure almost doubled to 35 per cent among those pupils who had chosen to study Music at GCSE. The difference is quite striking: GCSE Music was far more often characterized as exhibiting an élite code by pupils, especially those who had chosen to take the qualification, than other subject areas.

I have reported here only part of the early results of this study, and further research is required both to deepen this pilot work and to broaden its focus. For example, we have reservations about the wording of the questionnaire and research is required, particularly focus group work, to better capture possible

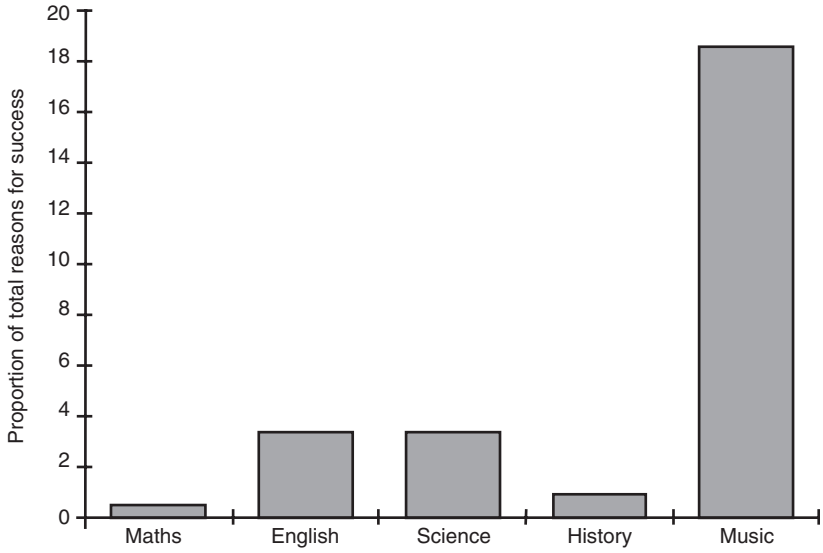


Figure 3.2 Proportion of Year 9 responses choosing 'élite code' as basis for success

options. Further analysis of the results may also reveal changes in the coding of Music in pupils' perceptions for different Key Stages that can be compared to those found in the National Curriculum documents. Both studies also form part of a bigger picture. For example, one hypothesis from the study of curriculum documents is that the élite code of GCSE Music may reflect a dominant view of professional music among actors in higher levels of education, such as universities and conservatoires; distinguishing between professional, élite performers combines exacting standards of both technical proficiency and sensibility and this may shape the nature of qualifications in Music at lower levels of the educational system. The genesis of the élite code within the official and pedagogic recontextualizing fields generating the National Curriculum and how the code is refracted within teaching and learning in schools and classrooms are thus areas for future research. However, the point for this paper is less the specificities of the substantive focus here and more the way it suggests that analysing both knowledge structures and knower structures together in terms of legitimation codes offers fruitful ways forward for empirical research. It reveals not only contexts exhibiting stronger or weaker classification and framing but also those with both; such contexts may appear contradictory or confusing if one considers educational knowledge structures on their own. Elite schools, for example, may operate with selection criteria based not only on qualifications but also issues of character and dispositions, or with what appear to be both performance and competence models of pedagogy. Integrating knower structures into the analysis may show such contexts exhibit an élite legitimation code. By being

firmly anchored on the concepts of classification and framing, the strong external language of description of legitimation code theory also enables analysis of the underlying principles structuring curriculum guidelines, teaching practice, pupils' perceptions, school structures and so forth in a manner enabling systematic comparisons within and between these contexts, something lacking from existing research on Music in the curriculum.

Conclusion

In this paper I have highlighted a second dimension to the analysis of intellectual and educational fields. Bernstein conceptualizes knowledge structures in fields of intellectual production and educational knowledge structures in fields of educational reproduction. I have suggested we can also analyse these fields in terms of the knower structures encoded into their discourses and practices. For every knowledge structure there is also a knower structure. This dimension lay tacitly present as a potential of the theory but is here brought into the open. This by itself can reveal interesting issues; for example, it leads us to recast the question of hierarchies in intellectual fields from 'whether' to 'where' – horizontal knowledge structures may be characterized by hierarchical knower structures. It also offers further insights into the underlying principles of knowledge formations. In the example of the 'two cultures' debate, analysing both its knowledge structure and knower structure shows how humanist culture was, according to its protagonists, being threatened by both new knowers and by the ascendant knowledge code of science. Integrating the analysis of knower structures with that of knowledge structures within the concept of legitimation code not only enables their different insights to be brought together but also enables us to generatively conceptualize new possibilities, such as relativist and élite codes. This conceptualization expands the range of phenomena encompassed within the theory not by displacing or adding to the insights of educational knowledge codes and knowledge structures but by *integrating* them (see Moore and Muller 2002). That the ideas can be extended to analyse fields of recontextualization and reproduction was illustrated by briefly discussing an ongoing research project into Music in the school curriculum. Preliminary results from this study suggest that the very low uptake of Music at GCSE level may be related to its élite code of legitimation. In summary, both the examples illustrate that the ways in which actors and discourses are specialized help shape the development, position and standing of knowledge formations and the opportunities available and constraints presented to actors within these fields – as Bernstein argues, such 'relations within' have their own structuring significance, with real effects for the position and status of subjects in the curriculum, career opportunities for teachers and academics, and numerous other pressing, everyday realities. Looking at how actors and discourses are specialized by both knowledge structures and knower structures thereby not only offers interesting possibilities for research but also highlights issues of crucial

significance for understanding and changing those intellectual fields and educational contexts which form our material and intellectual conditions of existence.

Notes

1 See Maton (2000, 2004) for analyses in terms of legitimation codes of changes in the disciplinary and institutional maps of higher education; Moore and Maton (2001) on the epistemic device; and Doherty (2004), Lamont (2004) and Wheelahan (2005) for examples of educational studies using legitimation codes.

2 The following draws on a more extensive study of the 'two cultures' debate which forms part of a wider analysis of the conditions of the emergence of British cultural studies in post-war higher education (Maton 2005). My coverage will be necessarily brief here as the principal focus is elucidating the notion of 'knower structures'; I shall analyse the debate more fully in a future publication.

3 The following is how science and the humanities were *portrayed* by numerous contemporary contributors to the 'two cultures' debate – a self-portrait of the disciplinary map by its participants – rather than an anthropological description of their enacted practices.

4 Integration of new knowers may be through resocialization (such as was attempted by the creation of new campus universities as resocializing institutions in 1960s English higher education; Maton 2004) or through a mixture of indoctrination and coercion (such as that underlying the Great Chain of Being of monarchical and papal hierarchies; Maton 2002). Educational expansion has typically accommodated new knowers through a combination of resocialization as the condition of entry into higher-status institutional and disciplinary positions or relegation into lower levels of these status hierarchies (cf. Hickox and Moore 1995).

5 I am broadening the original definitions of the concepts (Maton 2000) which reflected their basis in highlighting a specific issue: the significance of epistemological considerations in knowledge production. Moore and Maton (2001) argued and Maton (2004) showed that the epistemic device is also active in fields of recontextualization and reproduction. In other words, all discursive practices can be analysed in terms of a distinction between their epistemic and social relations.

6 Examples of these three include the focus in music educational research on notions of 'genius' and 'natural ability', emphasis in literary and art criticism on the cultivated sensibility of the reader or viewer through immersion in great works of culture, and standpoint epistemologies which base claims to privileged insight on membership of a specific social group. The definition of the form taken by 'dispositions' depends on the model of the knower; this analysis, however, reveals that despite surface differences, avowedly antagonistic positions, such as Leavisite and feminist literary criticism, share underlying structuring principles: a knower code.

7 GCSE is a public qualification taken through a combination of coursework and examination between age 14 and age 16. It is the first stage in the school system in England and Wales at which subjects can be chosen.

8 This research is being jointly conducted with Alexandra Lamont, a music psychologist at Keele University (see Lamont 2004 and QCA 2004). We shall report the results of this ongoing research more fully in future publications; my focus here is primarily on illustrating the conceptual development outlined in the current paper.

9 The results for English and History may reflect our wording of the options, particularly this first attempt to capture a dispositional emphasis. (Or it may be that humanist intellectuals in the 'two cultures' debate were correct and the humanities are indeed seen as nothing special.)

Bibliography

Adams, C. (2000) Statement by Carol Adams, Chief Executive of the General Teachers' Council for England, in *The GTC: Listening to Teachers*, London: General Teaching Council for England.

Adonis, A. (2001) *High Challenge, High Support*, London: Policy Network.

Agassi, J. (2003) 'Comparability and incommensurability', *Social Epistemology*, 17 (2, 3): 93–94.

Agre, P. E. (1997) *Computation and Human Experiences*, Cambridge: Cambridge University Press.

Ahier, J., Beck, J. and Moore, R. (2003) *Graduate Citizens? Issues of Citizenship and Higher Education*, London: RoutledgeFalmer.

Ahl, V. and Allen T. F. H. (1996) *Hierarchy Theory: a Vision, Vocabulary and Epistemology*, New York: Columbia University Press.

Alexander, R. (2004) 'Still no pedagogy? Principle, pragmatism and compliance in primary education', *Cambridge Journal of Education*, 34 (1): 7–33.

Allen, N. J. (1994) 'Primitive classification: the argument and its validity', in W. S. F. Pickering and H. Martins (eds) *Debating Durkheim*, London: Routledge and Kegan Paul.

Allen, W. (1959) 'The two cultures', *Encounter*, XIII (2): 67–68.

Althusser, L. (1971) 'Ideology and ideological state apparatus', in *Lenin and Philosophy*, (trans. B. Brewster), New York: New Left Books.

Anyon, J. (1980) 'Social class and the hidden curriculum of work', *Journal of Education*, 162 (1): 67–92.

Anyon, J. (1997) *Ghetto Schooling: A Political Economy of Educational Reform*, New York: Teachers College Press.

Anyon, J. (2005) *Radical Possibilities: Public Policy, School Reform and a New Social Movement*. New York: Routledge.

Apple, M (1979) *Ideology and the Curriculum*. London: Routledge and Kegan Paul.

Apple, M. (2002) 'Does education have independent power? Bernstein and the picture of relative autonomy', *British Journal of Sociology of Education, Special Issue: Basil Bernstein's Theory of Social Class, Educational Codes and Social Control*, 23 (4): 607–616.

Arnot, M. (2002) *Reproducing Gender? Essays in Educational Theory and Feminist Politics*, London: RoutledgeFalmer.

Arnot, M., McIntyre, D., Peddar, D. and Reay, D. (2004) *Consultation in the Classroom: Developing Dialogue about Teaching And Learning*, Cambridge: Pearson.

Arnot, M. and Reay, D. (2004) 'The framing of pedagogic encounters: regulating the social order of classroom learning', in J. Muller, B. Davies and A. Morais (eds) *Reading Bernstein, Researching Bernstein*, London: RoutledgeFalmer.

Atkinson, P. (1985) *Language, Structure and Reproduction: An Introduction to the Sociology of Basil Bernstein*, London: Methuen.

Atkinson, P., Davies, B. and Delamont, S. (1995) *Discourse and Reproduction: Essays in Honor of Basil Bernstein*, Cresskill, NJ: Hampton Press.

Bailey, C. H. (1984) *Beyond the Present and the Particular: A Theory of Liberal Education*, London: Routledge & Kegan Paul.

Bakhtin, M. M. (1981) The *Dialogic Imagination: Four Essays by M. M. Bakhtin* (ed. M. Holquist, trans. C. Emerson and M. Holquist), Austin: University of Texas Press.

Ball, S. J. (1990) *Politics and Policy Making in Education: Explorations in Policy Sociology*, London: Routledge.

Barber, M. (2001) *Large-Scale Education Reform in England: A Work in Progress*, paper for Managing Education Reform Conference, Moscow, 29–30 October.

Barber, M. (2003) *The Framework For Continuous Improvement*, speech delivered at the National College of School Leadership, 11 June, Nottingham. Available online at http://www.ncsl.org.uk/index.cfm?pageid=ev_auth_barber

Beck, J. (2002) 'The sacred and the profane in recent struggles to promote official pedagogic identities', *British Journal of Sociology of Education*, 23 (4): 617–626.

Beck, J. (2003) 'The school curriculum, the National Curriculum and New Labour reforms', in J. Beck and M. Earl (eds) *Key Issues in Secondary Education* (2nd edn), London: Continuum.

Beck, J. and Young, M. F. D. (2005) 'The assault on the professions and the restructuring of academic and professional identities', *British Journal of Sociology of Education*, 26 (2): 183–197.

Beck, U. (2001) *What Is Globalization?*, Cambridge: Polity.

Berlin, I. (2000a) *Three Critics of the Enlightenment: Vico, Hammann, Herder*, Princeton: Princeton University Press.

Berlin, I. (2000b) 'The essence of European Romanticism', in I. Berlin, *The Power of Ideas*, London: Pimlico Press.

Bernstein, B. (1970) 'Education cannot compensate for society', *New Society*, 387: 344–347.

Bernstein, B. (1971) 'On the classification and framing of educational knowledge', in M. F. D. Young (ed.) *Knowledge and Control*, London: Collier Macmillan.

Bernstein, B. (1973a) *Class, Codes and Control: Vol. 1*. London: Routledge & Kegan Paul (Original published in 1971).

Bernstein, B. (1973b) *Class, Codes and Control: Vol. 2*. London: Routledge & Kegan Paul (Original published in 1971).

Bernstein, B. (1974) *Class, Codes and Control, Volume I: Theoretical Studies Towards a Sociology of Language*, (2nd (revised) ed), London: Routledge & Kegan Paul.

Bernstein, B. (1977) *Class, Codes and Control, Volume III: Towards a Theory of Educational Transmissions*, London: Routledge & Kegan Paul.

Bernstein, B. (1981) 'Codes, modalities and the process of cultural reproduction: a model', *Language in Society*, 10: 327–363.

Bernstein, B. (1990) *Class, Codes and Control, Volume IV: The Structuring of Pedagogic Discourse*, London: Routledge & Kegan Paul.

Bernstein, B. (1995) 'Response', in A. R. Sadovnick (ed.) *Pedagogy and Knowledge: The Sociology of Basil Bernstein*, Norwood, NJ: Ablex.

Bernstein, B. (1996) *Pedagogy, Symbolic Control and Identity: Theory, Research, Critique*, London and Bristol: Taylor & Francis.

Bernstein, B. (1999a) 'Official knowledge and pedagogic identities', in F. Christie (ed.) *Pedagogy and the Shaping of Consciousness: Linguistic and Social Processes*, London: Continuum.

Bernstein, B. (1999b) 'Vertical and horizontal discourse: an essay', *British Journal of Sociology of Education*, 20 (2): 157–173.

Bernstein, B. (2000) *Pedagogy, Symbolic Control and Identity: Theory, Research, Critique* (rev. ed), London: Rowman & Littlefield.

Bernstein, B. (2001a) 'From pedagogies to knowledges', in A. Morais, I. Neves, B. Davies and H. Daniels (eds) (2001) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research* (pp. 363–368), New York: Peter Lang.

Bernstein, B. (2001b) Video Conference with Basil Bernstein, in A. Morais *et al*. (eds) *Towards a Sociology of Pedagogy*, New York: Peter Lang.

Bernstein, B. and Cook-Gumperz, J. (1973) *The Coding Grid in Socialisation and Social Control*, in B. Bernstein, Class, Codes and Control Vol. 2, Routledge & Kegan Paul.

Bernstein, B. and Solomon, J. (1999) 'Pedagogy, identity and the construction of a theory of structure of pedagogic control: Basil Bernstein questioned by Joseph Solomon', *British Journal of Sociology of Education*, 20 (2): 265–279.

Bevir, M. (2003) 'Notes towards an analysis of conceptual change', *Social Epistemology*, 17 (1): 53–63.

Bird, A. (2003) 'What is scientific progress?' Mimeo. Unpublished manuscript.

Bisseret, N. (1979) *Class, Language and Ideology*. London: Routledge & Kegan Paul.

Bloom, B. (ed.) (1964) *Taxonomy of Educational Objectives: The Classification of Educational Goals* (2 volumes), New York: McKay.

Blunkett, D. (2000) *Radical Changes Will Prepare Higher Education for the 21st Century*, press notice of speech at University of Greenwich, 15 February.

Blunkett, D. (2001) 'We *are* winning', *Guardian Education*, 6 March.

Boudon, R. (1971) *The Uses of Structuralism*, London: Heinemann.

Bourdieu, P. (1992) *Language and Symbolic Power*, Cambridge: Polity.

Bourdieu, P. (1993) *The Field of Cultural Production*, Cambridge: Polity.

Bourne, J. (2000) 'New imaginings of reading for a new moral order: a review of the production, transmission and acquisition of a new pedagogic culture in the UK', *Linguistics and Education*, 11 (1): 31–45.

Bourne, J. (2003) 'Vertical discourse: the role of the teacher in the transmission and acquisition of decontextualised language', *European Educational Research Journal*, 2 (4): 496–520

Bourner, T., Bowden, R. and Laing, S. (2001) 'Professional doctorates in England', *Studies in Higher Education*, 26 (1), 65–83.

Bowles, S. and Gintis, H. (1976) *Schooling in Capitalist America*, New York: Basic Books.

Bray, D. (2000) 'An examination of GCSE music uptake rates', *British Journal of Music Education*, 17 (1): 79–89.

Briggs, A. (1956) 'History and its neighbours', *Universities Quarterly*, 11 (1): 55–63.

Bronowski, J. (1961) *Science and Human Values*, London: Hutchinson.

Brookes, B. C. (1959a) 'The difficulty of interpreting science', *The Listener*, LXII: 519–521.

Brookes, B. C. (1959b) Letter to the editor, *The Listener*, LXII: 783–784.

Brown, A. J. (1999) 'Parental participation, positioning and pedagogy: a sociological study of the IMPACT primary school mathematics project', *Collected Original Resources in Education*, 24 (3): 7/A02–11/C09.

Brown, A. J. (2001) 'Becoming a researcher: reflections on the pedagogic practices of Basil Bernstein' in S. Power, P. Aggleton, J. Brannen, A. Brown, L. Chisholm and J. Mace (eds) *A Tribute to Basil Bernstein 1924–2000*: 72–76, London: Institute of Education.

Brown, A. J. and Dowling, P. C. (1998) *Doing Research/Reading Research: A Mode of Interrogation for Education*, London: Falmer.

BSCS (1995) *Developing Biological Literacy: Guide to Developing Secondary and Post-Secondary Biology Curricula*, Dubuque: Kendall/Hunt.

Butt, D. (1983) 'Semantic drift in verbal art', *Australian Review of Applied Linguistics*, 6 (1): 38–48.

Butt, D. (1988) 'Randomness, order and the latent patterning of text', in D. Birch and M. O'Toole (eds) *Functions of Style*, London: Pinter.

Callinicos, A. (2001) *Against the Third Way: An Anti-Capitalist Critique*, Cambridge: Polity.

Câmara, M. J. and Morais, A. (1998). 'O desenvolvimento científico no jardim de infância: Influência de práticas pedagógicas', *Revista de Educação, VII* (2): 179–199.

Cartwright, N. (2001) *The Dappled World: A Study of the Boundaries of Science*, Cambridge: Cambridge University Press.

Cloran, C. (1989) 'Learning through language: the social construction of gender', in R. Hasan and J. R. Martin (eds) *Learning Language, Learning Culture*, Norwood, NJ: Ablex.

Cloran, C. (1994) *Rhetorical Units and Decontextualization: An Enquiry into Some Relations of Context, Meaning and Grammar*, Nottingham: Department of English Studies, Nottingham University.

Cloran, C. (1999) 'Contexts for learning', in F. Christie (ed.) *Pedagogy and the Shaping of Consciousness: Linguistic and Social Processes*, London: Cassell.

Cole, M. (1996) *Cultural Psychology: A Once and Future Discipline*, Cambridge, MA: Harvard University Press.

Cole, M. and Engeström, Y. (1993) 'A cultural-historical approach to distributed cognition', in G. Salomon (ed.), *Distributed Cognition: Psychological and Educational Considerations*, New York: Cambridge University Press.

Cole, M., Engeström, Y. and Vasquez, O. (eds) (1997) *Mind, Culture and Activity*, Cambridge: Cambridge University Press.

Cook-Gumperz, J. J. and Hymes, D. (1972) *Directions in Sociolinguistics*, Oxford: Blackwell.

Cooper, B. and Dunne, M. (2000) *Assessing Children's Mathematical Knowledge: Social Class, Sex and Problem-solving*, Buckingham, England: Open University Press.

Coulson, S. (2001) *Semantic Leaps: Frame-shifting and Conceptual Blending in Meaning Construction*, Cambridge: Cambridge University Press.

Cross, C. T. (2004) *Political Education: National Policy Comes of Age*, New York: Teachers College Press.

Crouch, C. (2003) *Commercialisation or Citizenship: Education Policy and the Future of Public Services*, Fabian Ideas 606, London: The Fabian Society.

Daniels, H. (1988) 'An enquiry into different forms of special school organization, pedagogic practice and pupil discrimination', *CORE*, 12 (2): 4–11.

Daniels, H. (1989) 'Visual displays as tacit relays of the structure of pedagogic practice', *British Journal of Sociology of Education*, 10 (2): 123–140.

Daniels, H. (1995) 'Pedagogic practices, tacit knowledge and discursive discrimination: Bernstein and post-Vygtotskian research', *British Journal of Sociology of Education*, 16 (4): 517–532.

Daniels, H. (2001) *Vygotsky and Pedagogy*, London: RoutledgeFalmer.

Daniels, H. and Creese, A. with Hey, V. and Leonard, D. (2004) 'Gendered learning in two modalities of pedagogic discourse', in J. Muller, B. Davies and A. Morais (eds) *Reading Bernstein, Researching Bernstein*, London: RoutledgeFalmer.

Davies, B. (1995) 'Bernstein on classrooms', in P. Atkinson, B. Davies and S. Delamont (eds) *Discourse and Reproduction: Essays in Honour of Basil Bernstein*, Cresskill, NJ: Hampton Press.

DEB (1999) *Gestão flexível do currículo*, Lisbon: Ministry of Education.

DEB (2001) *Currículo nacional do ensino básico: Competências essenciais*, Lisbon: Ministry of Education.

DEB (2002) *Orientações curriculares para o 3º ciclo do ensino básico: Ciências Físicas e Naturais*, Lisbon: Ministry of Education.

Department of Education (2000) *A South African Curriculum for the 21st Century: Report of the Review Committee on Curriculum 2005*. Pretoria.

DfEE (Department for Education and Employment) (1997a) *Excellence in Schools*, London: Stationery Office.

DfEE (1997b) *Excellence for All Children: Meeting Special Educational Needs – A Programme of Action*, London: Stationery Office.

DfEE (1999) *Excellence in Cities*, London: Stationery Office.

DfEE (2001) *Schools: Building on Success*, Cmnd 5060, London: Stationery Office.

DfES (Department for Education and Skills) (2002) *Time for Standards: Reforming the School Workforce*, London: DfES.

DfES (2003) *Excellence and Enjoyment: A Strategy for Primary Schools*, London: DfES.

DfES/QCA (1999) *The National Curriculum for England: Music*, London: HMSO.

Diaz, M. (1984) *'A model of pedagogic discourse with special application to Colombian primary education'*, unpublished PhD thesis, University of London.

Diaz, M. (2001) 'Subject, power and pedagogical discourse', in A. Morais, I. Neves, B. Davies and H. Daniels (eds) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research*, New York: Peter Lang.

Dixon, W. M. (1938) *The Englishman*, London: Hodder & Stoughton.

Doherty, C. (2004) 'Student subsidy of the internationalized curriculum: knowing, voicing and producing the Other', paper presented at *Reclaiming Knowledge: Registers of discourse in the community and school* conference, University of Sydney, 13–15 December.

Domingos (now Morais), A. (1989) 'Conceptual demand of science courses and social class', in P. Adey (ed.) *Adolescent Development and School Science*, London: Falmer.

Dowling, P. (1998) 'The sociology of mathematics education: mathematical myths/pedagogic texts', London: Falmer.

Dowling, P. (1999) 'Basil Bernstein in frame: "Oh dear, is this a structuralist analysis?", at: http://www.ioe.ac.uk/ccs/dowling/kings1999/index.html.

Driel, J., Beijaard, D. and Verloop, N. (2001) 'Professional development and reform in science education role of teachers' practical knowledge', *Journal of Research in Science Teaching*, 38 (2): 137–158.

Durkheim, E. (1977) *The Evolution of Educational Thought: Lectures on the Formation and Development of Secondary Education in France* (trans. P. Collins), London: Routledge & Kegan Paul.

Durkheim, E. (1995) *The Elementary Forms of Religious Life* (trans. K. Fields), New York: The Free Press.

Dworkin, A. G. (2005) 'The No Child Left Behind Act: accountability, high-stakes testing, and roles for sociologists', *Sociology of Education*, 78 (2): 170–174.

ESRC (Economic and Social Research Council) (2005) *Postgraduate Research Training Guidelines* (4th ed), Swindon: ESRC.

Education Trust (2004) at: www.educationtrust.org.uk

Edwards, A. D. (1987) 'Language codes and classroom practice', *Oxford Review of Education*, 13 (3): 237–247.

Edwards, A. D. (1994) 'A reply to Basil Bernstein', *Oxford Review of Education*, 20 (2), 183–184.

Edwards, A. and Westgate, D. (1987) *Investigating Classroom Talk*, London: Falmer Press.

Edwards, T., Fitz, J. and Whitty, G. (1989) *The State and Private Education: An Evaluation of the Assisted Places Scheme*, Basingstoke: Falmer.

Elkonin, D. B. (1972) 'Toward the problem of stages in the mental development of the child', *Soviet Psychology*, No. 4: 6–20.

Elliott, J., Bridges, D., Ebbutt, D., Gibson, R. and Niass, J. (1981) *School Accountability*, London: Grant McIntyre.

Ellwood, W. (2002) *The No-Nonsense Guide to Globalization*, London: Verso.

Engeström, Y. (1993) 'Developmental studies on work as a test bench of activity theory', in S. Chaikin and J. Lave (eds) *Understanding Practice: Perspectives on Activity and Context*, Cambridge: Cambridge University Press.

Engeström, Y. (1996) *Perspectives on Activity Theory*, Cambridge: Cambridge University Press.

Engeström, Y. (1999) 'Innovative learning in work teams: analyzing cycles of knowledge creation in practice', in Y. Engeström, R. Miettinen and R.-L. Punamaki (eds) *Perspectives on Activity Theory*, Cambridge: Cambridge University Press.

Engeström, Y. and Middleton, D. (eds) (1996) *Cognition and Communication at Work*, Cambridge: Cambridge University Press.

Engeström, Y. and Miettinen, R. (1999) 'Introduction', in Y.Engeström, R. Miettinen and R.-L. Punamaki (eds), *Perspectives on Activity Theory*, Cambridge: Cambridge University Press.

Ensor, P. and Hoadley, U. (2004) 'Developing languages of description to research pedagogy', *Journal of Education*, 32: 82–103.

Fairclough, N. (1992) *Discourse and Social Change*, Cambridge: Polity.

Fairclough, N. (2000) 'Discourse, social theory and social research: the discourse of welfare reform', *Journal of Sociolinguistics*, 4 (2): 163–195.

Fairclough, N. (2004) 'The dialectics of discourse', at: http://www.geogr.ku.dk/courses/phd/glob-loc/papers/phdfairclough2.pdf (accessed 30 June 2004).

Fauconnier, G. and Turner, M. (2002) *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*, New York: Basic Books.

Freitas. C. V. (2000) 'O currículo em debate: Positivismo – pós-modernismo. Teoria – prática', *Revista de Educação*, IX (1): 39–52.

Furlong, J. (2003) 'BERA at 30: have we come of age?' Presidential address to the British Educational Research Association Annual Conference, Heriot-Watt University, Edinburgh.

Available online at http://www.bera.ac.uk/pdfs/BERApresidentialnopics.ppt (accessed 1 August 2005).

Gagné, R. M. (1985) *The Conditions of Learning, and Theory of Instruction* (4th ed), New York: Holt, Rinehart & Winston.

Gardner, H. (2005) *The Development and Education of the Mind: The Selected works of Howard Gardner*. New York: Routledge.

Gee, J. (1990) *Social Linguistics and Literacies: Ideology in Discourse*, Brighton: Falmer.

Gee, J. (2001) 'Learning in semiotic domains: a social and situated account', paper presented to the *International Literacy Conference*, Cape Town, 13–17 November.

Gellner, E. (1964) 'The crisis in the humanities and the mainstream of philosophy', in J. H. Plumb (ed.) *Crisis in the Humanities*, Harmondsworth: Penguin.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. and Trow, M. (1994) *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*, London: Sage.

Giddens, A. (1991) *Modernity and Self-Identity: Self and Society in the Late Modern Age*, Cambridge: Polity.

Goals 2000: Educate America Act (1994) PL 1804. Washington DC: United States Congress.

Goldman, A. (1999) *Knowledge in a Social World*, Oxford: Oxford University Press.

Gray, J. (1999) *False Dawn: The Delusions of Global Capitalism*, London: Granta Books.

Green, L. (2001) *How Popular Musicians Learn: A Way Ahead for Music Education*, Burlington: Ashgate.

Griffin, P. and Cole. M. (1984) 'Current activity for the future: the zo-ped', in B. Rogoff and J. V. Wertsch (eds) *Children's Learning in the Zone of Proximal Development*, San Francisco: Jossey-Bass.

Guardian Weekly, May 20–26, 2004.

Gutiérrez, K., Baquedano-López, P. and Tejeda, C. (1999) 'Re-thinking diversity: hybridity and hybrid language practices in the third space', *Mind, Culture and Activity*, 6 (4) 286–303.

Haack, S. (2003) *Defending Science – Within Reason*, New York: Prometheus.

Halliday, M. (1971) 'Linguistic function and literary style: an enquiry into the language of William Golding', in S. Chatman (ed.) *Literary Style: A Symposium*. London: Oxford University Press.

Halliday, M. (1985a) *Spoken and Written Language*, Geelong, Vic: Deakin University Press.

Halliday, M. (1985b) *An Introduction to Functional Grammar*, London: Edward Arnold.

Halliday, M. (1992) 'The act of meaning', in J. E. Alatis (ed.) *Communication and Social Meaning, Georgetown University Round Table 1992*, Georgetown: Georgetown University Press.

Halliday, M. (1994a) *Introduction to Functional Grammar*, (2nd ed), London: Edward Arnold.

Halliday, M. (1994b) 'On language in relation to the evolution of human consciousness', in Sture Allen (ed.) *Of Thoughts and Words (Proceedings of Nobel Symposium 92: The Relations between Language and Mind)*, London: Imperial College Press (also in J. Webster (ed.) (2003) *On Language and Linguistics*, Vol. 3, Collected Works of M. A. K. Halliday, London: Continuum.

Halliday, M. (1996) 'Literacy and linguistics: a functional perspective', R. Hasan and G. Williams (eds) *Literacy in Society*, London: Longman.

Halliday, M. and Matthiessen, M. I. M. (1999) *Construing Experience through Meaning*, London: Continuum.

Halsey, A. H. (1962) 'The responsibilities of universities', *Universities Quarterly*, 16 (2): 167–179.

Harland, J., Kinder, K., Lord, P., Stott, A., Schagen, I., Haynes, J. with Cusworth, L., White, R. and Paola, R. (2000) *Arts Education in Secondary Schools: Effects and Effectiveness*, Slough: National Foundation for Educational Research.

Harré, R. (1975) 'Rhetoric, Official and Unofficial, *Times Educational Supplement*, 18 July, 23a.

Hasan, R. (1971) 'Rime and reason in literature', in S. Chatman (ed.), *Literary Style: A Symposium*, London: Oxford University Press.

Hasan, R. (1985) *Linguistics, Language and Verbal Art*, Geelong, Vic: Deakin University Press.

Hasan, R. (1989) 'Semantic variation and sociolinguistics', *Australian Journal of Linguistics*, 9 (2): 221–275.

Hasan, R. (1992a) 'Speech genre, semiotic mediation and the development of higher mental functions', *Language Science*, 14 (4): 489–528.

Hasan, R. (1992b) 'Meaning in sociolinguistic theory', in K. Bolton and H. Kwok (eds), *Sociolinguistics Today: International Perspectives*, London: Routledge.

Hasan, R. (1995) 'On social conditions for semiotic mediation: the genesis of mind in society', in A. Sadovnik (ed.) *Knowledge and Pedagogy: The Sociology of Basil Bernstein*, Norwood, NJ: Ablex.

Hasan, R. (1996) 'Literacy, everyday talk and society', in R. Hasan and G. Williams (eds) *Literacy in Society*, London: Longman.

Hasan, R. (1999) 'The disempowerment game: Bourdieu and language in literacy', *Linguistics and Education*, 10 (1): 25–87.

Hasan, R. (2002a) 'Semiotic mediation and mental development in pluralistic societies: some implications for tomorrow's schooling', in *Learning for Life in the 21st Century: Sociocultural Perspectives on the Future of Education*, Malden, MA: Blackwell.

Hasan, R. (2002b) 'Ways of meaning, ways of learning: code as an explanatory concept', *British Journal of Sociology of Education*, 23 (4): 537–548.

Hasan, R. (2003) 'Globalization, literacy and ideology', *World Englishes*, 22 (4): 433–448.

Hasan, R. (2004) (manuscript) 'Semiotic mediation, language and society: three exotripic theories – Vygotsky, Halliday and Bernstein'.

Hasan, R., Fries, P. and Gregory, M. (eds) (1995) 'The conception of context in text', in *Discourse in Society: Systemic Functional Perspectives* (Meaning and Choice in Language: Studies for Michael Halliday) (ADPS50), Norwood: NJ: Ablex.

Hasan, R. and Williams, G. (1996) (eds) *Literacy in Society*, London: Longman.

Held, D. and McGrew, A. (2002) *Globalization/Anti-Globalization*, Cambridge: Polity.

Hertz, N. (2001) *The Silent Take-Over: Global Capitalism and the Death of Democracy*, London: Heinemann.

Hickox, M. and Moore, R. (1995) 'Liberal-humanist education: the vocationalist challenge', *Curriculum Studies*, 3 (1): 45–59.

Hirst, P. and Thompson, G. (1996) *Globalization in Question*, Cambridge: Polity.

Hobsbawm, E. (1994) *Age of Extremes: The Short Twentieth Century*, London: Michael Joseph.

Hobsbawm, E. (1999) *The New Century*, London: Abacus.

Holland, J. (1981) 'Social class and changes in orientations to meanings', *Sociology*, 15 (1): 1–18.

Ilyenkov, E. V. (1977) *Dialectical Logic. Essays on its History and Theory*, Moscow: Progress.

Ivinson, G. (1998a) 'The construction of the curriculum', unpublished PhD thesis, Cambridge University, England.

Ivinson, G. (1998b) 'The child's construction of the curriculum', *Papers on Social Representations: Threads and Discussions. Special Issue: The Development of Knowledge*, 7 (1–2): 21–40.

Ivinson, G. (2000). 'The child's construction of the primary school curriculum', in H. Cowie and D. Van der Aalsvoort (eds) *Social Interaction in Learning and Instruction: The Meaning of Discourse for the Construction of Knowledge*, Kidlington: Pergamon Press and EARLI.

Ivinson, G. (2002) 'Instructional and regulative discourses: a comparative case study of two classroom settings designed to ameliorate boys' underachievement in English', 2nd International Bernstein Conference, Cape Town.

Ivinson, G. and Duveen, G. (2005) 'Classroom structuration and the development of social representations of the curriculum', *British Journal of Sociology of Education*, 26 (5): 627–642.

Jayyusi, L. (1984) *Conversation and the Moral Order*, London: Routledge.

Jessop, B., Bonnett, K., Bromley, S. and Ling, T. (1984) 'Authoritarian populism: a tale of two nations and Thatcherism', *New Left Review*, 147 (Sept/Oct): 32–60.

Jones, K. (1989) *Right Turn – the Conservative Revolution in Education?* London: Hutchinson.

Jones, L. and Moore, R. (1995) 'Approaching competence: the competency movement, the New Right, and the "culture change" project', *British Journal of Education and Work*, 8 (2) 78–92.

Just4kids (2004) at: www.Just4kids.org.

Kelly, G. A. (1955) *The Psychology of Personal Constructs*, New York: W. N. Norton.

Kermode, F. (1966) *The Sense of an Ending: Studies in the Theory of Fiction*, Oxford: Oxford University Press.

Klemperer, V. (2002) *The Language of the Third Reich* (trans Martin Brady), London: Continuum.

Koestler, A. (1967) *The Ghost in the Machine*, New York: Macmillan.

Kuhn, T. (1962) *The Structure of Scientific Revolutions*, Chicago: Chicago University Press.

Labaree, D. (2004) *The Trouble with Ed Schools*, New Haven: Yale University Press.

Lamont, A. (2004) 'What are the possible reasons for the low take-up of music GCSE?' *Music in Key Stage 4: QCA Music Development Group working paper*, London: Qualifications and Curriculum Authority.

Lamont, A., Hargreaves, D. J., Marshall, N. A. and Tarrant, M. (2003) 'Young people's music in and out of school', *British Journal of Music Education*, 20 (3): 1–13.

Lave, J. (1988) *Cognition in Practice*, Cambridge: Cambridge University Press.

Lave, J. and Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*, Cambridge: Cambridge University Press.

Lea, M. and Nicoll, K. (eds) (2002) *Distributed Learning*, London: RoutledgeFalmer.

Leaton Gray, S. (2004) 'Defining the future: an interrogation of education and time', *British Journal of Sociology of Education*, 25 (3): 323–340.

Lee, H. D. P. (1955) 'The position of classics in schools', *Universities Quarterly*, 9 (2): 135–144.

Lemke, J. (1997) 'Cognition, context, and learning: a social semiotic perspective', in D. Kirshner (ed.) *Situated Cognition Theory: Social, Neurological, and Semiotic Perspectives*, New York: Erlbaum.

Leonard, A. (2000) 'Achieving progression from the GCSE to AS', *Teaching History*, 98: 30–34.

Leontiev, A. N. (1978) *Activity, Consciousness, and Personality*, Englewood Cliffs: Prentice-Hall.

Leontiev, A. N. (1981) 'The concept of activity in psychology', in J. V. Wertsch (ed.) *The Concept of Activity in Soviet Psychology*, Armonk, NY: M. E. Sharpe.

Lunt, I. (2002) 'Professional doctorates in education', paper commissioned by the Education Subject Centre (ESCalate). Available online at: http://www.escalate.ac.uk/1712 (accessed 1 August 2005.

Lyons, J. (1977) *Semantics, 1*, Cambridge: Cambridge University Press.

Mackerness, E. D. (1960) 'Ignorant Armies'. *The Universities Review,* 33 (1): 14–17.

Madely, J. (1999) *Big Business, Poor People*, London: Zed Books.

Madely, J. (2000) 'Putting people before principles', *Guardian Weekly*.

Makitalo, A. and Saljo, R. (2002) 'Talk in institutional contexts and institutional contexts in talk: categories as situated practice', *Text* 22(1), 57–82.

Markus, G. (2003) 'The paradoxical unity of culture: the Arts and the Sciences', *Thesis Eleven*, 75: 7–24.

Marquand, D. (1995) 'Flagging Fortunes', *The Guardian*, 3 July, p. 13.

Martin, J. R. (1986) 'Intervening in the process of writing development', in *Writing to Mean: Teaching Genres Across the Curriculum*, C. Painter and J. R. Martin (eds), Occasional Paper No 9: Applied Linguistics Association of Australia.

Martin, J. R. and Rose, D. (2003) *Working With Discourse: Meaning Beyond the Clause*, London: Continuum.

Maton, K. (2000) 'Recovering pedagogic discourse: a Bernsteinian approach to the sociology of educational knowledge', *Linguistics and Education*, 11 (1): 79–98.

Maton, K. (2002) 'Popes, kings and cultural studies: placing the commitment to non-disciplinarity in historical context', in S. Herbrechter (ed.) *Cultural Studies: Interdisciplinarity and Translation*, Amsterdam: Rodopi.

Maton, K. (2004) 'The wrong kind of knower: education, expansion and the epistemic device', in J. Muller, B. Davies and A. Morais (eds) *Reading Bernstein, Researching Bernstein*, London: RoutledgeFalmer.

Maton, K. (2005) 'The field of higher education: a sociology of reproduction, transformation, change and the conditions of emergence for cultural studies', unpublished PhD thesis, University of Cambridge.

Matos, M. and Morais, A. (2004). 'Trabalho experimental na aula de ciências físico-químicas do 3º ciclo do ensino básico: Teorias e práticas dos professores', *Revista de Educação*, XII (2), 75–93.

Matthews, M. R. (2004a) 'Editorial', *Science and Education*, 13 (1–2): 1–6.

Matthews, M. R. (2004b) 'Re-appraising positivism and education: the arguments of Philipp Frank and Herbert Feigl', *Science and Education*, 13 (1–2): 7–39.

Matthiessen, M. (1995) *Lexicogrammatical Cartography: English Systems*, Tokyo: International Language Science Publishers.

Merton, R. K. (1993) (1st pub. 1965) *On the Shoulders of Giants*, Chicago: University of Chicago Press.

Merttens, R. and Vass, J. (1990) *Sharing Maths Cultures: IMPACT – Inventing Maths for Parents and Children and Teachers*, London: Falmer.

Merttens, R. and Vass, J. (1993) (eds) *Partnerships in Maths: Parents and Schools*, London: Falmer.

Moore, R. (2004a) *Education and Society: Issues and Explanations in the Sociology of Education*, Cambridge: Polity.

Moore, R. (2004b) 'Cultural Capital: objective probability and cultural arbitrary', *British Journal of Sociology of Education*, 25 (4): 445–456.

Moore, R. and Maton, K. (2001) 'Founding the sociology of knowledge: Basil Bernstein, epistemic fields and the epistemic device', in A. Morais, I. Neves, B. Davies and H. Daniels (eds) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research*, New York: Peter Lang.

Moore, R. and Muller, J. (1999) 'The discourse of 'voice' and the problem of knowledge and identity in the sociology of education', *British Journal of Sociology of Education*, 20 (2): 189–206.

Moore, R. and Muller, J. (2002) 'The growth of knowledge and the discursive gap', *British Journal of Sociology of Education*, 23 (4): 627–637.

Morais, A. and Antunes, H. (1994) 'Students' differential text production in the regulative context of the classroom', *British Journal of Sociology of Education*, 15 (2): 243–263.

Morais, A., Fontinhas, F. and Neves, I. P. (1993) 'Recognition and realization rules in acquiring school science: contribution of pedagogy and social background of pupils', *British Journal of the Sociology of Education*, 13 (2): 247–70.

Morais, A. and Neves, I. (2001) 'Pedagogic social contexts: studies for a sociology of learning', in A. Morais, I. Neves, B. Davies and H. Daniels (eds) *Towards a Sociology of Pedagogy*, New York: Peter Lang.

Morais, A., Neves, I. and Afonso, M. (2005) 'Teacher training processes and teachers' competence: a sociological study in the primary school', *Teaching and Teacher Education*, 21:415–437.

Morais, A., Neves, I. P., Afonso, A. and Pires, D. (1997) *Caracterização da prática pedagógica do 1º Ciclo do Ensino Básico (Contexto instrucional e contexto regulador)*, ESSA Group, Department of Education, School of Science, University of Lisbon.

Morais, A., Neves, I. Davies, B. and Daniels, H. (2001) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research*, New York: Peter Lang.

Morais, A., Neves, I. P., Medeiros, A., Peneda, D., Fontinhas, F. and Antunes, H. (1993) *Socialização primária e prática pedagógica: Vol. 2, Análise de aprendizagens na família e na escola*, Lisbon: Gulbenkian Foundation.

Morais, A., Neves, I. and Pires, D. (2004) 'The *what* and the *how* of teaching and learning', in J. Muller, B. Davies and A. Morais (eds) *Reading Bernstein, Researching Bernstein*, London: RoutledgeFalmer.

Morais, A., Neves, I. P. *et al*. (2000) *Estudos para uma sociologia da aprendizagem*. Lisbon: Institute for Educational Innovation and Centre for Educational Research of SSUL.

Morais, A., Peneda, D., Neves, I. P. and Cardoso, L. (1992) *Socialização primária e prática pedagógica: Vol. 1*. Lisbon: Gulbenkian Foundation.

Morris, M. (1959) 'The two cultures and the scientific revolution', *Marxism Today*, 3 (12): 374–380.

Moss, G. (2001) 'Bernstein's languages of description: some generative principles', *International Journal of Social Research Methodology*, 4 (1), 17–19.

Moss, G. (2002) 'Literacy and pedagogy in flux: constructing the object of study from a Bernsteinian perspective', *British Journal of Sociology of Education*, Special Issue: Basil Bernstein's Theory of Social Class, Educational Codes and Social Control, 23 (4): 549–558.

Moss, G. (2004) 'Changing practice: the NLS and the politics of literacy policy', *Literacy*, 38 (3): 126–133.

Muller, J. (2000) *Reclaiming Knowledge: Social Theory, Curriculum and Education Policy*, London: RoutledgeFalmer.

Muller, J. (2002) 'Progressivism redux: ethos, policy, pathos', in A. Kraak and M. Young (eds) *Education in Retrospect: Policy and Implementation Since 1990*, Pretoria and London: HSRC Publishers and Institute of Education, University of London.

Muller, J., Davies, B. and Morais, A. (eds) (2004) *Reading Bernstein, Researching Bernstein*, London: RoutledgeFalmer.

Nagel, E. (1961) *The Structure of Science: Problems in the Logic of Scientific Explanation*, London: Routledge & Kegan Paul.

Nash, R. (2002) 'Numbers and narratives: further reflections in the sociology of education', *British Journal of Sociology of Education*, 23, (3): 397–412.

National Commission on Excellence in Education (NCEE) (1983) *A Nation at Risk*, Washington DC: U.S. Department of Education.

Neves, I. P. and Morais, A. (2001) 'Texts and contexts in educational systems: studies of recontextualising spaces', in A. Morais, I. Neves, B. Davies and H. Daniels (eds), *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research*, New York: Peter Lang.

Niiniluoto, I. (2002) 'Scientific progress', *The Stanford Encyclopaedia of Philosophy*, (Winter 2002 edition), E. N. Zalta (ed.), at: http://plato.stanford.edu/archives/win2002/entries/scientific-progress/.

No Child Left Behind Act of 2001 [NCLB] (2002) P.L 107–110. Washington, DC: United States Congress.

Norman, E. R. (1977) 'The threat to religion', in C. B. Cox and R. Boyson (eds) *Black Paper 1977*, London: Temple Smith.

Olson, D. (1977) 'From utterance to text: the bias of language in speech and writing', *Harvard Educational Review*, 47 (3): 257–281.

Pakenham, T. (1963) 'The study of the university teacher: the Gulbenkian educational discussion 1962', *Universities Quarterly* 17 (2): 149–164.

Patterson, J. T. (2002). *Brown v. Board of Education: A Civil Rights milestone and its Troubled Legacy*, New York: Oxford University Press.

Pedro, E. R. (1981) *Social Stratification and Classroom Discourse: A Sociolinguistic Analysis of Classroom Practice*, Lund: liber laromedel.

Phillips, D. C. (2004) 'Two decades after "After the wake": postpositivistic educational thought', *Science and Education*, 13 (1–2): 67–84.

Pinker, S. (1999) *Words and Rules: The Ingredients of Language*, Cambridge: Cambridge University Press.

Pinker, S. (2002) *The Blank Slate: The Modern Denial of Human Nature*, London: Allen Lane.

Plato (1994) *Republic* (trans R. Waterfield), Oxford: Oxford University Press.

Plato (1994) *Symposium (*trans R. Waterfield), Oxford: Oxford University Press.

Plumb, J. H. (ed.) (1964) *Crisis in the Humanities*, Harmondsworth: Penguin.

Popper, K. (2002) (1st pub. 1963) *Conjectures and Refutations: The Growth of Scientific Knowledge*, London: Routledge Classics.

Porter, A. (2002) 'Measuring the content of instruction: uses in research and practice', *Educational Researcher*, 31 (7): 3–14.

Power, S. (2000) 'Missing: A sociology of educating the middle class', in J. Demaine (ed.) *Sociology of Education Today*, London: Macmillan.

Power, S., Edwards, T., Whitty, G. and Wigfall, V. (2003) *Education and the Middle Class*, Buckingham: Open University Press.

Power, S. and Whitty, G. (2002) 'Bernstein and the Middle Class', *British Journal of Sociology of Education*, 23 (4) 595–606.

Power, S., Whitty, G. and Edwards, T. (forthcoming) 'Success sustained?' A follow-up study of the 'Destined for Success?' cohort. *Research Papers in Education*.

QCA (Qualifications and Curriculum Authority) (2004) *Music in Key Stage 4: Developing Qualifications within the Vision of a Holistic and Progressive Music Education for All*, London: QCA. Music Development Working Paper.

Quicke, J. (1988) 'The 'New Right' and education', *British Journal of Educational Studies*, 36 (1): 5–20.

Ravtich, D. (1983) *The Troubled Crusade*, New York: Basic Books.

Ravtich, D. (2000) *Left Back: A Century of Battles over School Reform*, New York: Simon & Schuster.

Readings, B. (1996) *The University in Ruins*, Cambridge, MA: Harvard University Press.

Reay, D. and Arnot, M. (2004) 'Participation and control in learning: a pedagogic democratic right?', in L. Poulson and M. Walters (eds) *Learning to Read Critically in Teaching and Learning*, London: Sage.

Reeves, C. and Muller, J. (2005) 'Picking up the pace: variation in the structure and organization of learning school mathematics', Cape Town: School of Education, University of Cape Town.

Rocha, M. C., and Morais, A. (2000) 'A relação investigador-professor nos projectos de investigação-acção: Uma abordagem sociológica', in A. Morais, I. Neves *et al.*, *Estudos para uma sociologia da aprendizagem* (Chap. XVII), Lisbon: Institute for Educational Innovation and Centre for Educational Research (SSUL).

Rogoff, B. and Lave, J. (1984) (eds) *Everyday Cognition: Its Development in Social Context*, Cambridge, MA: Harvard University Press.

Rosa, C. (2002) 'Actividades em ciências no jardim de infância: Estudo sobre o desenvolvimento profissional dos educadores', unpublished Master's Dissertation, School of Science, University of Lisbon.

Rosen, H. (1972) *Language and Class: A Critical Look at the Theories of Basil Bernstein*, Bristol: Falling Wall Press.

Sacks, H. (1992) *Lectures on Conversation (Vol.1)*. Oxford: Blackwell.

Sadovnik, A. (1991) 'Basil Bernstein's theory of pedagogic practice: a structuralist approach', *Sociology of Education*, 64 (1): 48–63.

Sadovnik, A. (ed.) (1995) *Knowledge and Pedagogy: The Sociology of Basil Bernstein*, Norwood, NJ: Ablex.

Sadovnik, A. and Semel, S. (2000) 'Bernstein's theory of pedagogic practice: a sociological analysis of urban and suburban schools in the New York City Metropolitan Area', in A. Morais (ed.) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research* (pp. 189–207), New York: Peter Lang.

Sarangi, S. and Roberts, C. (1999) 'Introduction: discursive hybridity in medical work', in S. Sarangi and C. Roberts (eds) *Talk, Work and Institutional Order: Discourse in Medical, Mediation and Management Settings*, Berlin: Mouton de Gruyter.

Savage, M. (2000) *Class Analysis and Social Transformation*, Buckingham: Open University Press.

Savage, M., Barlow, J. and Fielding, T. (1992) *Property, Bureaucracy and Culture: Middle Class Formation in Contemporary Britain*. London: Routledge.

Scott, D., Brown, A. J., Lunt, I. and Thorne, L. (2003) 'Integrating academic and professional knowledge: constructing the practitioner-researcher', in E. McWilliam, (ed.) *Research Training for the Knowledge Economy* (pp. 15–24), Brisbane: Queensland University of Technology.

Scott, D., Brown, A. J., Lunt, I. and Thorne, L. (2004) *Professional Doctorates: Integrating Professional and Academic Knowledge*, Buckingham: Open University Press.

Semel, S. (1995) 'Bernstein's theory of pedagogic practice: applications to the history of progressive education in the United States', in A. Sadovnik (ed.), *Knowledge and Pedagogy: The Sociology of Basil Bernstein*, Norwood, NJ: Ablex.

Semel, S. and Sadovnik, A. (eds) (1999) *Schools of Tomorrow, Schools of Today: What Happened to Progressive Education?*, New York: Peter Lang.

Shapin, S. (1996) *The Scientific Revolution*, Chicago: University of Chicago Press.

Sharp, R. and Green, R. (1975) *Education and Social Control*, London: Routledge & Kegan Paul.

Silva, P., Morais, A. and Neves, I. P. (2003) *Caracterização da prática pedagógica do 1º Ciclo do Ensino Básico (Contexto instrucional e contexto regulador)*, ESSA Group, Department of Education, School of Science, University of Lisbon.

Silverman, D. and Torode, B. (1980) *The Material World*, London: Routledge.

Singh, P. (1993) 'Institutional discourse: a case study of the social construction of technical competence in the primary classroom', *British Journal of Sociology of Education*, 13 (1): 189–206.

Singh, P. (2001) 'Pedagogic discourse and student resistance in Australian secondary schools', in A. Morais, I. Neves, B. Davies, and H. Daniels (eds) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research*, New York: Peter Lang.

Singh, P. (2002) 'Pedagogising knowledge: Bernstein's theory of the pedagogic device', *British Journal of Sociology of Education*, 23 (4): 571–582.

Sloboda, J. A. (2001) 'Conference keynote: emotion, functionality and the everyday experience of music', *Music Education Research*, 3 (2): 243–253.

Snow, C. P. (1959) *The Two Cultures and the Scientific Revolution*, Cambridge: Cambridge University Press.

Snow, C. P. (1964) *The Two Cultures and a Second Look*, Cambridge: Cambridge University Press.

Strathern, M. (1992) *After Nature: English Kinship in the Late Twentieth Century*, Cambridge: Cambridge University Press.

Street, B. (1995) *Social Literacies: Critical Approaches to Literacy Development, Ethnography and Education*, Harlow, UK: Longman.

Tashakkori, A. and Teddlie, C. (2003) 'Issues and dilemmas in teaching research methods courses in social and behavioural sciences: US perspective', *International Journal of Social Research Methodology*, 6 (1), 61–77.

Taylor, C. (2002) *The RCBN Consultation Exercise: Stakeholder Report*, Research Capacity Building Network Occasional Paper 50, Cardiff: Cardiff University School of Social Sciences.

Tomlinson, J. (1993) *The Control of Education*, London: Cassell.

Tractenberg, P., Holzer, M., Miller, J., Sadovnik, A. and Liss, B. (2002) *Reestablishing Local Control in New Jersey's Takeover Districts*, Trenton: New Jersey Department of Education.

Tyler, W. (1988) *School Organization: A Sociological Perspective*, London: Croom Helm.

UK Council for Graduate Education (1998) *The Status of Published Work in Submissions for Doctoral Degrees in European Universities*, Warwick: UKCGE.

Valsiner, J. (1997) *Culture and the Development of Children's Action: A Theory of Human Development* (2nd edition), New York: John Wiley and Sons.

van Leeuwen, T. and Humphrey, S. 1996. 'On learning to look through a geographer's eyes', in R. Hasan and G. Williams (eds) Literacy in Society (Applied Linguistics and Language Study), London: Longman.

Vygotsky, L. S. (1978) *Mind in Society: The Development of Higher Psychological Processes*, M. Cole, John-Steiner, S. Scribner and E. Souberman (eds and trans), Cambridge MA: Harvard University Press.

Walford, G. and Pickering, W. S. F. (1998) *Durkheim and Modern Education*, London: Routledge.

Walkerdine, V. (1988) *The Mastery of Reason*, London, New York: Routledge.

Walkerdine, V. (1989) *Counting Girls Out*, London: Virago.

Weinberg, S. (1993) *Dreams of a Final Theory*, New York: Vintage.

Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*, Cambridge: Cambridge University Press.

Wenger, E., McDermott, R. and Snyder, W. (2002) *Cultivating Communities of Practice*, Harvard Business School Press.

Wertsch, J. V. (1991) *Voices of the Mind: A Socio-Cultural Approach to Mediated Action*, Cambridge, MA: Harvard University Press.

Wertsch, J. V. (1985) *Vygotsky and the Social Formation of Mind*, Cambridge, MA: Harvard University Press.

Wexler, P. and Grabiner, G. (1986) 'America during the crisis', in R. Sharp (ed.) *Capitalism, Crisis and Schooling*, South Melbourne: Macmillan.

Wheelahan, L. (2005) 'Comparing realist and rationalist defences of propositional knowledge in the curriculum'. Paper presented at: *Engaging Realist Alternatives: IACR Conference*, Sydney, 10–12 July.

Whitty, G. (1990) 'The New Right and the National Curriculum: state control or market forces?', in M. Flude and M. Hammer (eds) *The Education Reform Act 1988: Its Origins and Implications*, London: Falmer.

Whitty, G. (2001) 'Education, social class and social exclusion', *Journal of Education Policy*, 16 (4) 287–295.

Whitty, G. with Power, S. (2002) 'The overt and hidden curricula of quasi-markets', in G. Whitty, *Making Sense of Education Policy*, London: Paul Chapman.

Whitty, G., Rowe, G. and Aggleton, P. (1994) 'Discourse in cross-curricular contexts: limits to empowerment', *International Studies in the Sociology of Education*, 4 (1): 25–41.

Wilber, K. (1995) *Sex, Ecology, Spirituality: The Spirit of Evolution*, Boston: Shambhala.

Williams, G. (1995) 'Joint book-reading and literacy pedagogy: a socio-semantic examination', unpublished doctoral dissertation, Macquarie University, North Ryde, Australia.

Williams, G. (2000) 'Children's literature, children and uses of language description', in L. Unsworth (ed.) *Research Language in Schools and Communities: Functional Linguistic Perspectives*, London: Cassell.

Williams, G. (2001) 'Literacy pedagogy prior to schooling: relations between social and semantic variation', in A. Morais, I. Neves, B. Davies, and H. Daniels (eds) *Towards a Sociology of Pedagogy: The Contribution of Basil Bernstein to Research*, New York: Peter Lang.

Wilson, S. and Berne, J. (1999) 'Teacher learning and the acquisition of professional knowledge: an examination of research on contemporary professional development', in A.

Iran-Nejad and P. Pearson (eds), *Review of Research in Education*, Washington DC: American Educational Research Association.

Young, M. F. D. (1971) *Knowledge and Control: New Directions for the Sociology of Education*, London, Collier Macmillan.

Young, M. F. D. (2000) 'Rescuing the sociology of educational knowledge from the extremes of voice discourse: towards a new theoretical basis for the sociology of the curriculum', *British Journal of Sociology of Education*, 21 (4): 523–536.

Zelman v. Simmons-Harris, 122 S. Ct. 2460 (2002).