5 EDUCATION AND KNOWLEDGE

In this chapter we explore the nature, role and structure of education and knowledge. First, we outline key stages in the evolution of Australian education and the changing ideologies that shaped its development. We examine the key issues this history raises for sociology, in particular persistent differences in educational outcomes among social classes, genders and ethnicities. We then set out the principal ways sociological theories have explained the role of education in maintaining and changing social inequalities. Finally, we discuss the crucial role of knowledge in contemporary societies and outline new ways sociologists are exploring the significance of knowledge for education and society.

By the end of the chapter, you should have a better understanding of:

- the evolving nature of education in Australia
- key ideologies shaping the development of Australian education
- central issues and questions addressed by the sociology of education
- differential educational achievements of social classes, genders and ethnicities and their role in reproducing or changing social inequalities
- strengths and limitations of different ways of analysing education, encompassing externalist, internalist and culturalist approaches
- a range of significant sociological theories and key studies of education
- cutting-edge work rethinking the role of knowledge in education and society.

CONTENTS

CASE STUDY
Educating Australia's prime ministers

This chapter opened with quotes from two Australian prime ministers in which they argued that education is crucial to Australia's future as a nation for a variety of reasons. Looking again at the quotes, make a list of the roles they see education as fulfilling. Are these roles compatible with one another?

Source: Australian Associated Press Pty Ltd.

Both prime ministers also talked of the role that teachers and practices in schools played in their own life stories. What kinds of sociological explanations would emphasise the role of teachers and classroom practices?

Kevin Rudd is a Caucasian male who grew up in regional Australia, while Julia Gillard is a Caucasian female whose parents did not complete Year 12. How might these personal characteristics have played a role in their rise to prominence? How might different educational theories account for why they were each successful but people from different social backgrounds are often less so?

experiences and student-centred learning, will help students from working-class families to succeed. In Bernstein's terms, this represents weak classification and weak framing, or an integrated code. Using these concepts, studies by a range of scholars—including Bourne (2003), Morais, Neves and Pires (2004) and Moss (2006)—show that such well-intentioned claims are misguided: such educational practices disadvantage the very groups they are assumed to help. Put simply, students from working-class backgrounds have been less socialised into possessing the keys to the integrated code than students from cultural middle-class families. The coding orientations of working-class students are typically based on a collection code or stronger boundaries and forms of control (what Bernstein previously termed 'positional' forms of authority). When faced with weaker boundaries and control they may struggle to recognise what is required of them and/or to provide the correct kind of performances. They are, in short, 'fish out of water'. Unless these students are clearly and explicitly taught the 'rules of the game' of schooling, the codes to success, they are likely to become disengaged and alienated.

Educational knowledge codes are only one dimension of Bernstein's framework for analysing educational practices (for a detailed account, see Moore 2013). However, they illustrate how his approach provides concepts that fully enable analysis of the key factors highlighted by other culturalist thinkers: the dispositions students bring to schooling; the structure of the educational contexts and practices they encounter there; and relations between the two. In his later work Bernstein also laid the groundwork for sociologically analysing knowledge itself. It is to the question of knowledge, a key theme in contemporary sociology, that we now turn.

FUTURE TRENDS: THE RISE OF KNOWLEDGE

A challenge to established sociological approaches has emerged in recent years in the form of 'knowledge'. According to many sociologists we are entering a fundamentally new age in which knowledge is crucial. This new era has been given a host of different names, such as the 'information age' (Castells 1996b), and is associated with the emergence of 'knowledge societies' (Stehr 1994) based on 'knowledge economies' that require their citizens to actively engage in 'lifelong learning'. Though accounts of change differ in terms of their relative emphases on different aspects of social life, they almost all share two principal features:

1. *Knowledge is central to social change.* Knowledge is now viewed as permeating all areas of social life, from the market, social structure and political sphere to the family, identity and individual consciousness. The rise of new information and communications technologies (ICTs) is said to be rapidly expanding and democratising knowledge, spreading the sources of its creation and circulation beyond the walls of formal education thanks to, for example, social media and Web 2.0. Moreover, economic changes are making knowledge central to our working lives. Bernstein (2001), for example, argued we are entering a 'totally pedagogised society' where, as Sennett (1998) described, workers are expected to retrain regularly and learn new skills throughout their lives. Much of this retraining is held to be for jobs in the ever-growing knowledge economy, in which the creation and circulation of information are more significant than the production and distribution of material goods.
2. *Knowledge is largely untheorised.* Maton (2013a) identifies a **knowledge paradox** at the heart of sociological understandings of contemporary societies. Although knowledge is said to be central to modern societies, most accounts of social change lack a theory of knowledge!

> For example, in Manuel Castells' three-volume work, *The Information Age*, the definition of knowledge is relegated to a footnote as 'a set of organized statements of facts or ideas' (1996b, p. 17). Like other accounts, Castells treats knowledge as homogeneous and having no inner structure with properties or powers of its own, as if the forms knowledge takes are of no consequence. So, the very thing that is supposedly now central to every aspect of our lives is itself not theorised or well understood.

This 'knowledge-blindness' (Maton 2013a) extends to most sociological research on education. As Bernstein (1990) highlights, sociological studies of education tend to focus on *relations to* knowledge, such as the relations of class, gender and ethnicity to the curriculum or classroom practice. This is true of both externalist and internalist approaches: whether looking beyond or within education, both tend to study relations to knowledge. This is to ignore *relations within* knowledge or the forms taken by knowledge itself, its internal structures, such as whether it is abstract or concrete, based on specialist procedures or personal experiences, context-dependent or context-independent, among many other features. Sociology has traditionally failed to address how these different forms of knowledge may shape educational experiences and outcomes, such as via their relations to the socialised dispositions of students. As research using Bernstein's code theory shows (see p. 69), if high-status knowledge is, for example, context-independent, this shapes educational opportunities because different social backgrounds are more and less oriented towards providing actors with familiarity and ease with such knowledge. Instead, research has treated knowledge as simply a reflection of power relations.

This view has dominated sociological thinking since at least the early 1970s. For example: reproduction theories argued that educational knowledge reflects the needs of capitalism; feminist and multicultural theories argue that curricula and classroom practices reflect the experiences of white European men; and post-structural approaches claim that knowledge constructs our identities in ways that reflect the interests of the powerful. As these examples suggest, the 'relations to' focus has been adopted by researchers drawing on a diverse range of other theories, including symbolic interactionism, social phenomenology and cultural anthropology, as well as ideas from Bourdieu, Foucault, Derrida and Lyotard, among others.

Why have almost all sociological approaches neglected 'relations within' knowledge? A growing number of 'social realists' (Maton & Moore 2010a) argue that this knowledge-blindness reflects a deep-seated but mistaken belief that *either* knowledge must be decontextualised, value-free and objective (essentialism) *or* it is nothing but socially and historically constructed and reflects relations of power (relativism). Faced with this choice, sociologists of education have, unsurprisingly, highlighted the historically and socially situated nature of knowledge, emphasised the ways knowledge is shaped by struggles among social groups with differing degrees of power and so focused on how educational knowledge reflects the interests of dominant social groups. The result has been a tendency towards treating knowledge as if it were little more than a mirror of social power with no properties or powers of its own. As Moore concludes, 'being sociological about knowledge seems to relentlessly drive us into the relativist position that, actually, there is no knowledge' (2009, p. 3).

Since the advent of the 21st century a new approach to understanding knowledge and its role in education has emerged: **social realism**. This approach proclaims the choice between essentialism and relativism to be false and shows that analysing 'relations within' knowledge is crucial to understanding education and society.

Social realism

Social realism builds primarily on the culturalist theories of Basil Bernstein and Pierre Bourdieu (see p. 167) and emerged from discussions among a range of sociologists of knowledge and education that began in the late 1990s and early 2000s (for key papers establishing the approach, see Maton & Moore 2010b). Social realism highlights that knowledge is the basis of education as a social field of practice; it is the production, curricularisation, and teaching and learning of *knowledge* that makes education a distinct field. To reduce knowledge to power is thus to obscure a defining feature of education. Moreover, social realism argues that the choice between essentialism and relativism is false: we can say that knowledge is historically and socially situated and shaped by struggles among social groups without saying this also means all knowledge is equal and its status merely a reflection of social power. Social realism acknowledges that knowledge changes and is shaped by relations of power but maintains that this is not the whole story. Not all knowledge claims are equal—some are more epistemologically powerful and offer better explanations than others (Moore 2009). Exploring the collective procedures whereby judgements of the comparative value of knowledge claims are made by academics or teachers has thus been a central and ongoing focus of social realist research.

Above all, social realism argues that different forms of knowledge have effects for intellectual and educational practices: knowledge may be *social* but it is also *real*. Against the knowledge-blindness afflicting existing accounts of education and social change more generally, social realism brings the forms taken by knowledge into view. Social realists do not argue that this is the *only* factor that matters in understanding education and society; rather they show that this one key factor has been missing and reveal how it helps shape education and society.

One simple way of analysing these forms draws on Basil Bernstein's conceptualisation of two different forms of discourse (1999):

- *Horizontal discourse* refers to everyday or 'commonsense' knowledge, where meaning is largely dependent on the specific context, so different knowledges may be strongly bounded from one another; for example, learning to tie up your shoes bears little relation to learning how to use the lavatory correctly.
- *Vertical discourse* refers to educational, formal or 'official' knowledge and 'takes the form of a coherent, explicit, and systematically principled structure' (1999, p. 159) where meanings are related to other meanings (such as in a curriculum or textbook) rather than to a specific social context.

Bernstein then makes a second distinction within vertical discourse between:

- *hierarchical knowledge structures* which develop through integrating past knowledge within more overarching ideas that attempt to explain a greater number of phenomena than was previously understood, and
- *horizontal knowledge structures* which develop through the addition of a new approach or theory (e.g. new 'isms', such as Marxism, feminism, etc.) alongside existing approaches and from which it is strongly bounded.

This model of different forms of knowledge has been proving fruitful for analysing issues concerning the nature of both academic inquiry and teaching and learning in classrooms (Christie & Martin 2007; Christie & Maton 2011). For example, it highlights the different ways in which knowledge develops over time. In terms of research, studies show how 'horizontal knowledge structures' tend to repeat themselves: the names of thinkers and theories may change, but the same basic ideas are reinvented with each new segmented approach (Maton & Moore 2010b). This limits cumulative progress. In contrast, 'hierarchical knowledge structures' build on previous knowledge, enabling ever-more powerful explanations to be constructed that reach across an expanding range of phenomena.

How forms of knowledge develop is also being explored in teaching and learning. Maton (2009), for example, analyses examples of student work from schools and universities in Australia. He shows how many students experience 'segmented learning', where new ideas and skills are failing to build on their previous knowledge, rather than 'cumulative learning', where new knowledge builds on and integrates existing knowledge. Wheelahan (2010) also shows how the forms of knowledge taught in vocational education and training in Australia are often less powerful because they are highly dependent on their context. Rather than being taught principles of knowledge, so that learned ideas can be used across a wide range of contexts, students are typically learning skills for specific tasks that are less transferable to other contexts. Given that working-class students are overrepresented in vocational education, this research highlights how forms of knowledge with differing properties and powers are being taught to different social classes. Bringing knowledge into the equation thereby makes differential educational outcomes a question of who gets access not simply to education or to higher status institutions but also to more powerful forms of knowledge.

More generally, social realism highlights that contemporary accounts of society and social change are incomplete as long as they treat knowledge as homogeneous and neutral. Claims that knowledge is now central to modern societies tell only part of the story because the forms this knowledge takes and who has access to which forms are crucial for shaping the nature of personal, social, cultural and economic life.

Legitimation Code Theory

The central example of a social realist framework is Legitimation Code Theory, or LCT (Maton 2013a). Unlike many of the other theories we have discussed, LCT is less a set of claims about the nature or purpose of education; rather, it offers a conceptual toolkit for research. The framework allows research to get beneath the surface features of empirical situations to explore their organising principles or 'codes'. A useful analogy is to think of the genetic code that lies behind all our differences and similarities such as height, weight and so on. LCT aims to get at the genetic codes of practices, in order to reveal the fundamental 'rules of the game' or bases of achievement ('legitimation') of different contexts, the ways they develop over time, what they enable or constrain, and how they relate to the dispositions actors bring to those contexts.

The framework is being used to explore a diverse range of issues: inside education, studies of teaching and learning are looking at everything from physics to jazz studies, from educational technology to design; beyond education, research is exploring the role of knowledge in practices as different as freemasonry and parliamentary procedures (Maton, Hood & Shay 2013). Below we briefly discuss two dimensions of the framework and illustrate how they are being used to shed light on the role of knowledge in education and society.

Specialisation of knowledge practices

One dimension of LCT is 'Specialisation', which analyses the organising principles of knowledge in terms of what makes a claim to insight special or worthy of distinction (Maton 2000, 2007, 2013a). This begins from the premise that every practice, belief or knowledge claim is about or oriented

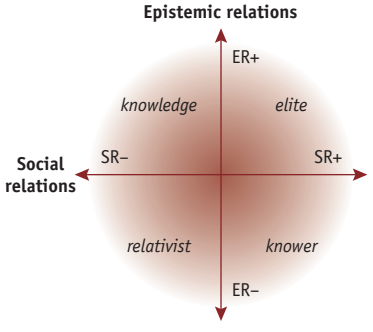
towards something and by someone, and so sets up *epistemic relations* (ER) to objects and *social relations* (SR) to subjects, authors or actors. Simply put, each relation may be more strongly (+) or weakly (–) emphasised in practices and beliefs, and these two strengths together give a 'specialisation code'. This code represents one set of the organising principles underlying practices. Any claim to knowledge can be viewed as specialised by its epistemic relations, by its social relations, by both or by neither. Figure 5.7 outlines four such codes:

- a *knowledge code* (ER+, SR–), where possession of specialised knowledge, skills or procedures is emphasised as the basis of achievement and the dispositions of authors or actors are downplayed
- a *knower code* (ER–, SR+), where specialist knowledge or skills is less significant and instead the dispositions of the author or actor as a knower are emphasised as the measure of achievement, whether these are viewed as natural (e.g. 'genius'), cultivated (such as an educated artistic gaze) or socially based (such as a specific gender, e.g. being female)
- an *elite code* (ER+, SR+), where legitimacy is based on both possessing specialist knowledge and being the right kind of knower ('elite' does not mean 'socially exclusive' but rather highlights the necessity of possessing *both* legitimate knowledge *and* legitimate dispositions)
- a *relativist code* (ER–, SR–), where legitimate insight is said to be determined by neither specialist knowledge nor specific dispositions—a kind of 'anything goes'.

These concepts provide a means for conducting research into a wide variety of issues, including the dispositions brought by students to education, the nature of educational practices, and relations between the two. We briefly illustrate how they enable the role of knowledge to be brought into the picture.

Chen, Maton and Bennett (2011), for example, explored why Chinese students studying at a university in Australia struggle with certain forms of teaching. This major study analysed the educational dispositions these students bring with them as representing a 'knowledge code': an emphasis on states of knowledge and expectations of clear, explicit procedures for achieving success. In contrast, the courses they were studying in Australia represented a 'knower code': teachers downplayed explicit instruction and emphasised that students already possessed legitimate ideas and should create their own knowledge based on their personal experiences. The Chinese students did not understand these rules of the game—they did not see personal experience as legitimate knowledge and felt that they were not being taught properly. In other words, there was a 'code clash' between the expectations and dispositions of these students (knowledge code) and the educational practices they encountered (knower code). The students did not recognise the basis of achievement. The result in this case was that the students felt abandoned, lost, inferior, helpless, guilty and depressed. Previous studies had attributed success or failure as something to do with being Chinese, obscuring knowledge practices. This study illustrates that the experiences students bring with them should be related to the form taken by knowledge practices, thereby revealing how knowledge helps shape educational experiences and achievement.

Figure 5.7 Specialisation codes



Source: Karl Maton, eds. F. Christie and J. Martin, 'Knowledge-knower structures in intellectual and educational fields' in Language, Knowledge and Pedagogy: Funcational linguistics and sociological perspectives; 2007, Continuum (Taken over by Bloomsbury 2011), Figure 5.3, p. 97 (pp. 87–108).

Another set of studies has explored why school qualifications in Music have an extremely low take-up rate among students (Lamont & Maton 2008, 2010). Previously, this has been attributed to issues such as the value of these qualifications in the job market, but this does not explain why subjects such as Drama have a far higher take-up rate. Studies using LCT focused instead on the role of the forms of knowledge associated with Music at school. The research shows how students experience a 'code shift' from being a knower code at primary school, where personal expression and creativity at music are emphasised, to a knowledge code at secondary school, where emphasis shifts to technical and theoretical knowledge of music. In other words, the rules of the game change, typically without students being told. Crucially, in school Music a second code shift occurs as students near qualifications at the age of 16, which requires students to demonstrate not only musical knowledge but also musical dispositions—an elite code. In other words, students are judged according to two measures of success, making school qualifications in Music potentially less attractive than other subjects. The research suggests that the job market value of qualifications is only part of the story: the form taken by knowledge practices plays a role in shaping students' subject choices.

A final example explores the uses of digital technology in classrooms. This is a crucial issue in contemporary education and is viewed as an essential part of its future. In the past few years the Australian government has spent $2.4 billion on ICT as part of the Digital Education Revolution. In New South Wales this program has involved providing a laptop for every student in Years 9–12. A major longitudinal study

using LCT is exploring this laptop initiative, focusing on how technologies are integrated into classroom practices. It is well-established that their use differs across subjects, but existing explanations typically view uses for student-centred learning as correct and integration within didactic teaching as reflecting teacher resistance to its possibilities. In contrast, one part of the LCT study shows how the ways technologies are used relate to the kinds of knowledge being taught and learned. Howard and Maton (2011), for example, focus on the two key subjects of Mathematics and English. They show that teachers and students view Mathematics as a knowledge code. Here, technologies are accordingly used for teaching and learning specialised principles and procedures. In contrast, English is viewed as a knower code, and technologies are typically used to enable students to creatively express personal opinions and experiences with texts. The ways technologies are used thus depend at least partly on the kinds of knowledge teachers and students are engaging with. This is illustrated further by those aspects of English that are more knowledge code, such as teaching and learning grammar: here, technologies are typically used to serve more didactic practices focused on principles of knowledge. One wider implication is that no single notion of how technology should be used in education is correct and that different knowledges require different practices.

Semantics of knowledge practices

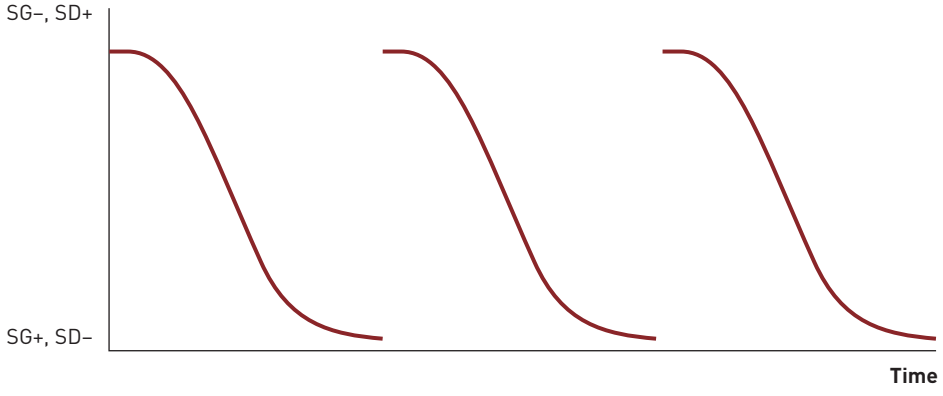
A second dimension of LCT is 'Semantics', which explores forms of knowledge in terms of two key concepts:

1. *semantic gravity*, or the degree of context-dependence of meaning—the stronger the semantic gravity (SG+), the more knowledge is dependent on its context to make sense; the weaker the semantic gravity (SG–), the less dependent knowledge is on its context for its meaning
2. *semantic density*, or the degree of condensation of meaning—the stronger the semantic density (SD+), the more meanings are condensed within a symbol or practice; the weaker the semantic density (SD–), the less meanings are condensed.

Together, the strengths of semantic gravity and semantic density give a second set of organising principles to knowledge practices: *semantic codes*. One issue that research using these concepts is focusing on concerns how knowledge can enable or constrain the building of ideas over time. For example, a major study of secondary schooling in New South Wales analysed the knowledge discussed in classrooms and charted the findings as 'semantic profiles' (Martin & Maton 2013). Figure 5.8 shows a profile the study found repeated widely across classrooms: as discussion unfolds over time in a lesson, the kind of knowledge being discussed repeatedly traces a downward movement or 'down escalator' profile from decontextualised and highly condensed ideas (SG–, SD+) towards more concrete and simplified understandings (SG+, SD–). For example, when reading a text with students, teachers often explain ideas and words that are abstract and technical, translating the terms into less technical, more 'everyday' language and giving concrete examples from everyday life. This repeated 'unpacking' of knowledge models how to contextualise and simplify ideas, but not how to move back to the more abstract and general ideas students need to express in their assessments if they are to succeed.

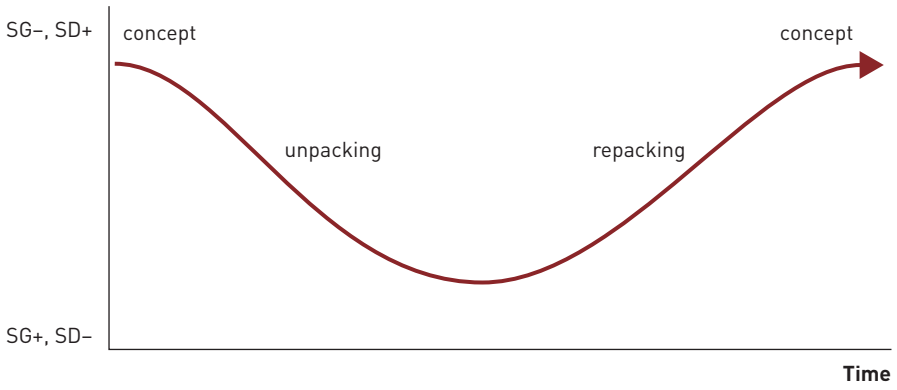
In contrast, the study also showed how teachers and students can create 'semantic waves' where knowledge is transformed from abstract and condensed to concrete and simplified meanings but then transformed back again, through 'repacking' examples and simplified ideas into technical terms such as concepts. Figure 5.9 shows one such semantic wave, beginning with a concept that is unpacked into simpler and more concrete ideas, which are then in turn repacked into more abstract and general terms. This enables the knowledge being taught and learned to be transferred across contexts and so build across time. It also models how to bring together examples into the specialised discourse

Figure 5.8 Semantic profiles: a 'downward escalator'



Source: Karl Maton, Making semantic waves: A key to cumulative knowledge-building, Linguistics and Education, 2013a, p. 14.

Figure 5.9 A semantic wave



Source: Karl Maton, Making semantic waves: A key to cumulative knowledge-building, Linguistics and Education, 2013a, p. 15.

of academic subjects, which students are required to do in assessments. Ongoing research is suggesting that students from different social groups are more or less adept at making such semantic waves by virtue of their socialised dispositions, and establishing ways in which teachers can be trained to enable more students to do so (Martin & Maton 2013).

What such studies are showing is how the forms taken by knowledge can shape educational experiences and outcomes. Approaches like LCT are beginning to unpick the complex nature of knowledge and the roles it plays in all aspects of our lives. They are also attempting to integrate the insights of past approaches, so that the sociology of education builds on the past in order to understand the future. LCT, for example, extends and integrates ideas from Bourdieu and Bernstein. However, there is still much to be explored and explained: educational inequalities persist and the role played by education and knowledge in modern society remains a source of intense debate and discussion within contemporary sociology.

TUTORIAL EXERCISE

Consider this sociology textbook. Read through the contents pages and think about relations between the chapters and the narrative within each chapter. Do areas of sociology relate to each other, or are they often separate? How do new theories relate to older theories? In your group, make a case for seeing sociology as integrating past ideas within newer, more encompassing theories. Then make a case for describing sociology as being segmented into a series of theories and topics in which newer ideas add to but largely fail to build on older ones. What forms of knowledge do these represent? What are the gains and losses of sociology being either of these forms of knowledge?

FURTHER READING

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

WEBSITES

Australian Association for Research in Education: www.aare.edu.au/live

Department of Education, Employment and Workplace Relations: http://deewr.gov.au

This website provides insights into the current political discourse surrounding education.

International Sociological Association's special-interest group on sociology of education: www.isa-sociology.org/rc04.htm

Social Realism and Legitimation Code Theory: www.legitimationcodetheory.com

This website includes resources, news, events and social media sites related to social realist sociology.

The Australian Sociological Association, sociology of education: www.tasa.org.au/web-links/sociology-of-education

This website lists resources on the sociology of education.