

Specialization from Legitimation Code Theory: How the basis of achievement shapes student success

Karl Maton & Rainbow Tsai-Hung Chen

1. Introduction

Why are some students more successful than others? This is a key issue for education. In this chapter we illustrate how Legitimation Code Theory (LCT) – specifically concepts from the dimension of Specialization – can help shed light on this issue. Our example draws from a major study of Chinese students who were taught online at an Australian university using a form of pedagogy called ‘constructivism’.¹ This topic brings together three major stimuli to change in higher education in Anglophone countries that have yet to be fully explored by research. First, a rise in international students over recent decades has outpaced educational studies into the effects of different forms of pedagogy on their experiences. Second, an ongoing expansion of online learning is widely proclaimed by policymakers and university managers as the future for higher education. However, such claims are based on limited evidence of the positive effects of online learning for student achievement (Bennett & Maton 2011). Third, literature in education that proclaims the value of ‘constructivism’ as a form of pedagogy has grown exponentially. ‘Constructivism’ is often loosely defined by its advocates and related to a wide range of pedagogic approaches, but all downplay direct instruction by teachers in favour of facilitating learners to learn in independent ways that are said to empower learners by enabling them to ‘construct’ their own understandings (Jonassen & Land 2000). Though these ideas have become increasingly influential in higher education in Anglophone countries, such claims are based on little empirical research into learners’ experiences (Kirschner *et al.* 2006, Tobias & Duffy 2009). The study we shall discuss brings these issues together by focusing on Chinese students taught online according to constructivist ideas while studying at an Australian university.

Chinese students represent the largest international student cohort in Australia (Australia Education International 2012). However, research into Chinese students overseas more generally has overwhelmingly focused on the students alone. For example, challenges faced by Chinese students in online learning environments have been attributed to proclaimed cultural attributes or language barriers of those students (e.g. Morse, 2003; Smith *et al.*, 2005; Tu, 2001; Zhao & McDougall, 2008). This is a deficit view of Chinese students, who are said not to possess the attitudes or qualities required for success in the environment. This model reflects what Maton (2014: 3–8) identifies as widespread ‘knowledge-blindness’ in education research: a tendency to ignore knowledge practices, such as the structuring of the curriculum, pedagogy and assessment. From this perspective it does not matter what the students are learning or how they are being taught – they succeed or fail because of who they are. Such a deficit model ignores the possibility that the teaching practices students encounter may contribute to their experiences.

¹ See Chen (2010) for the whole study and Chen *et al.* (2011) for a summary.

In contrast, LCT not only allows knowledge practices to be seen and analysed, it also brings them into relation with analysis of students themselves. LCT views educational experiences (or, indeed, any practices) as an outcome of what the French sociologist Pierre Bourdieu (1996: 256) called ‘the meeting of two histories’ or logics: the dispositions (ways of acting, thinking and being) brought by actors to a context and the nature of that context itself. Put simply, actors’ practices are the outcomes of their dispositions relating to their contexts. Crucially, LCT offers concepts that can be used to analyse all parts of this equation, enabling them to be brought together: the dispositions of actors, the contexts within which they are situated, and their resulting experiences and practices. Before discussing the empirical study of Chinese students, we shall thus briefly introduce LCT and the key concepts enacted in the research.

2. Legitimation Code Theory: Specialization²

LCT is a sociological framework for researching and changing practice. LCT views knowledge as both socially produced and real, in the sense of having effects (Maton & Moore 2010), and explores the effects of different forms of knowledge practices for a diversity of issues. The framework integrates insights from a wide range of approaches, but its principal foundations reside in Basil Bernstein’s code theory (1977, 1990, 2000). LCT extends and integrates code theory to offer concepts that embrace more phenomena within a more systematic and integrated framework (see Maton 2014). This theoretical development is, however, always in dialectical relations with empirical research. LCT is a ‘practical theory’ used to explore a host of issues, practices and contexts in education and beyond (Maton 2016), both on its own and alongside complementary frameworks such as systemic functional linguistics (Martin & Maton, Chapter 1, this volume; Maton & Doran 2016c; Maton *et al.* 2016b).³

LCT views society as a series of relatively autonomous social fields of practice (such as law, medicine, education, etc.) characterized by their own ways of working and their own resources and forms of status.⁴ In each social field, actors cooperate and struggle over the resources and status that are constitutive of that field, both for more of what is viewed as signs of success in the field and over what should define success, in ways that advance their own positions. In other words, actors’ practices embody messages concerning what should be the dominant measurement of achievement within a field: they are *languages of legitimation* (Maton 2000, 2007, 2014). To analyse the nature of these measures, LCT conceptualizes the organizing principles underlying these ‘languages’ as *legitimation codes*. There is usually more than one code within any specific context and there are typically struggles over which code should be dominant. The balance of power between different codes within a social field shapes what is legitimate and thus possibilities within

² LCT was introduced in Chapter 1 of this volume; relevant concepts are defined here to enable this chapter to be read on its own.

³ For LCT research, see: <http://www.legitimationcodetheory.com>

⁴ ‘Social field’ should not be confused with the concept of ‘field’ from SFL. Any use of SFL terms will be explicitly highlighted.

that field. LCT is, therefore, a ‘sociology of possibility’ (Maton 2014: 3), a means of exploring what is possible for whom, when, where and how, who is able to define these possibilities, when, where and how, and how the impossible can be made possible.

2.1. Specialization codes

There are five dimensions to LCT: Specialization, Semantics, Autonomy, Temporality and Density. Each dimension is a set of concepts centred on theorizing a different form of legitimation code. For definitions of these concepts, see Maton (2014, 2016). In this chapter we focus on the dimension of Specialization which conceives social fields of practice as *knowledge–knower structures* whose organizing principles are conceptualized as *specialization codes* that comprise *epistemic relations* and *social relations*.

In simpler terms, Specialization begins from the premise that every practice is about or oriented towards something and by someone. One can, therefore, analytically distinguish: *epistemic relations* between practices and their object or focus (that part of the world towards which they are oriented); and *social relations* between practices and their subject, author or actor (who is enacting the practices). For knowledge claims, these are realized as: *epistemic relations* between knowledge and its proclaimed objects of study; and *social relations* between knowledge and its authors or subjects. These relations highlight questions of: *what* can be legitimately described as knowledge (epistemic relations); and *who* can claim to be a legitimate knower (social relations). Each of these relations may be more strongly (+) or weakly (–) emphasized independently and the two strengths together generate *specialization codes* (ER+/-, SR+/-). As shown in Figure 1, these strengths are visualized as the *specialization plane*, a topological space with four principal modalities:

- *knowledge codes* (ER+, SR–), where possession of specialized knowledge, principles or procedures concerning specific objects of study is emphasized as the basis of achievement, and the attributes of actors are downplayed;
- *knower codes* (ER–, SR+), where specialized knowledge and objects are downplayed and the attributes of actors are emphasized as measures of achievement, whether viewed as born (e.g. ‘natural talent’), cultivated (e.g. ‘taste’) or social (e.g. feminist standpoint theory);
- *élite codes* (ER+, SR+), where legitimacy is based on both possessing specialist knowledge and being the right kind of knower; and
- *relativist codes* (ER–, SR–), where legitimacy is determined by neither specialist knowledge nor knower attributes – ‘anything goes’.

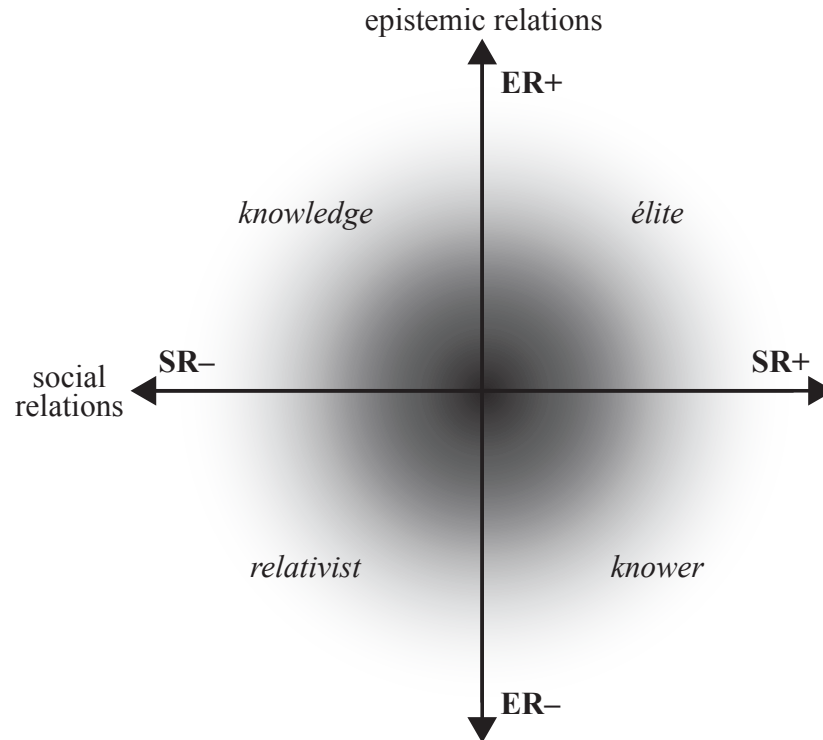


Figure 1: The specialization plane (Maton 2014: 30)

Specialization codes conceptualize one dimension of the measures of achievement (languages of legitimation) embodied by actors' dispositions, contexts and practices. In the four codes listed above what matters is: 'what you know' (knowledge codes), 'the kind of knower you are' (knower codes), both (*élite* codes), or neither (*relativist* codes). A specific code may dominate as the basis of achievement, but may not be transparent, universal or uncontested. Not everyone may recognize and/or be able to realize what is required, there may be more than one code present, and there are likely to be struggles among actors over which code is dominant. One can thus describe degrees of *code clash* and *code match*, such as between: learners' dispositions and pedagogic practices; education policies and subject areas; different approaches within an intellectual field; curriculum and pedagogy of a subject area; and many others. For example, studies of a large-scale policy initiative in Australian schools (Howard & Maton 2011, Howard *et al.* 2015) show how the policy successfully integrated educational technology into subject areas that matched its knower-code intentions but was less successful in subjects characterized by other specialization codes, where code clashes were evident. Similarly, research into postwar British higher education (Maton 2004) highlighted how new universities were built for working-class students that represented a code clash with the dispositions brought by those students from their upbringings, with the result that these universities were largely avoided by working-class students.

As well as matches or clashes, the dominant code may also change, such as between subject areas, classrooms and stages of a curriculum (or, for dispositions, through

education or over the lifecourse). These *code shifts* effectively change the ‘rules of the game’. For example, research into the low uptake of qualifications in music in English schooling (Lamont & Maton 2008, 2010) reveals that the curriculum shifts from a knower code at primary school to a knowledge code during the early years of secondary school, and then towards an elite code for formal school qualifications in upper secondary school. Such code shifts can have profound implications, such as rendering previously successful actors unable to continue to succeed or, in this example, reducing the take-up rate of a qualification.

2.2. Enacting specialization codes in this study

The concepts of specialization codes have been widely enacted to explore a host of different issues, across the disciplinary map – from engineering (Wolff & Hoffman 2014) through sociology (Luckett 2012) to jazz (J. L. Martin 2016) – at all levels of education, as well as in other social fields of practice, including law (Martin *et al.* 2014) and museums (Carvalho *et al.* 2015). See, for example, studies brought together in Maton *et al.* (2016a). Here, our concern is with understanding the experiences of Chinese students studying online at an Australian university. As discussed in section 1, in contrast to the one-sided focus on students that dominates much research in this area, a fuller understanding of students’ experiences requires analysis of: (1) the educational dispositions these students bring with them to the Australian university context; (2) the nature of the university context they were in while studying; and (3) their resulting practices. These represent the three main foci of the study.

First, three focus groups with 16 Chinese students explored their educational dispositions. Students were selected from different faculties at the university to help gain a broad understanding of differing kinds of experiences and expectations brought by Chinese students. The aim was not to characterize Chinese education itself but rather to explore these students’ ways of characterizing their experiences of that education. Participants were asked, for example to describe their study in China, their teachers’ expectations of them, and their own expectations of their teachers and their courses of study.

Second, the study focused on students undertaking postgraduate online units in the Faculty of Education at the university. To characterize this context, eight university teachers were interviewed and unit outlines analysed. (Here an online unit refers to a study unit that is fully or predominantly delivered online with very little face-to-face contact).

Third, seven in-depth case studies were conducted of Chinese students studying different postgraduate online units in the Faculty of Education. Students were drawn from various specializations in the faculty, such as Information and Communication Technologies in Learning; Educational Leadership; and Teaching English to Speakers of Other Languages (TESOL). They were each interviewed an average of four times (for a total of 41 hours) through each semester in their native language (Mandarin) about their experiences with their online units.

These three foci involved different methods, forms of data, and participants. Moreover, in exploring dispositions, contexts and practices, the study analysed each in terms of curriculum, pedagogy and assessment. One of the strengths of LCT concepts is that they can be used to analyse diverse objects of study, allowing very different phenomena to be related together. Each concept may thus take a variety of empirical forms; for example, stronger epistemic relations may be empirically realized differently in interviews and in teaching materials and, further, differently in teaching materials in terms of the curriculum, pedagogy and assessment. A key task in LCT is, therefore, to establish the empirical realizations of concepts within each specific phenomenon and to make this explicit in the form of what Bernstein (2000) termed an ‘external language of description’ or what LCT calls a ‘translation device’.⁵ In this case, the aim was to describe: first, how epistemic relations and social relations are realized in the study as a whole; and, second, how relatively stronger and relatively weaker forms of those relations are realized for each focus. Table 1 summarizes the first to show that: epistemic relations are realized in this study as a degree of emphasis on content knowledge (curriculum), teaching of content knowledge (pedagogy, and explicit criteria (assessment); and social relations as a degree of emphasis on learners’ personal experiences (curriculum); personal dimensions of learning (pedagogy); and learners’ self-evaluations (assessment).

Concept	Focus	Degree of emphasis on:
epistemic relations	curriculum	content knowledge of a study unit
	pedagogy	teaching of content knowledge
	assessment	explicit evaluative criteria
social relations	curriculum	learner’s personal knowledge and experience
	pedagogy	personal dimension of the learning process
	assessment	learner’s self-evaluation

Table 1: Realizations of epistemic relations and social relations in Chen (2010) study

Table 2 (at the end of this chapter) offers an example of a specific translation device (or external language of description) that focuses on the experiences of Chinese students. It comprises: the forms taken by epistemic relations and social relations in discussions of curriculum, pedagogy and assessment; indicators for whether data exhibits stronger or weaker relations; and quotes from the data as examples. It includes separate sections for epistemic relations and for social relations. Each section is structured so that when read from left to right it translates theory into data, and when read from right to left it translates data into theory. The former shows how concepts are enacted in this particular object of study; the latter shows how data can be conceptualized as exemplifying strengths of epistemic relations and social relations. For example, in the curriculum row

⁵ See Maton & Chen (2016) for how to create translation devices, using the study we discuss here as an example; see Maton & Howard (2016) for how to develop quantitative instruments to analyse specialization codes; and see Maton & Doran (2016a, 2016b) for tools translating between epistemic-semantic density and English discourse.

of ‘epistemic relations’, the quote ‘The information in the textbook – decided by the teacher – was what a study unit was all about’ suggests content knowledge is being highlighted as the determining form of legitimate knowledge, which represents stronger epistemic relations, and so is coded as exhibiting ‘ER+’. Conversely, the quotes in the table illustrate the kinds of data coded as differing strengths of relations, giving insight into how further data should be conceptualized. This translation device enables different realizations of epistemic relations and social relations in the diverse data of the study to be coded and brought together so that we can analyse the dispositions brought to the learning context by the students, the nature of that context and their consequent experiences and practices. We now turn to discuss the findings of the study for each of these in turn.

3. Educational dispositions of Chinese students

We should emphasize that this is not an account of Chinese education, still less is it judging Chinese education (see section 7). Here we are analysing how the particular participants of this specific study described their own experiences and expectations of education. The aim is to reveal the educational dispositions these students brought to the Australian university context. Thus, the veracity of their accounts of Chinese education are not the issue here: the question is how the students described their experiences and expectations.

When describing their past experiences of education, participants emphasized the strongly insulated nature of the curriculum. As Chris described:⁶

When I studied in China, my feeling was that the information in the textbook—decided by the teacher—was what the study unit was all about... You gain a wide range of knowledge. Every study unit will touch a little on different issues in that area, and maybe the teacher will highlight a couple of things that are more important. The textbook usually covers everything.
(interview 4)

The students felt the learning of content knowledge was emphasized in this explicit curriculum. Anything beyond the boundary of a study unit, such as other forms of educational knowledge and one’s everyday practice, was not considered relevant to the learning of the particular subject content. Emphasis was thus placed on strongly bounded and controlled content knowledge: relatively strong epistemic relations (ER+). In addition, according to participants, the curriculum downplayed making connections among the constituent parts of this content knowledge. For example, while all students stressed the importance of accumulating a great amount of new information, none spoke of learning principles for connecting previously learned knowledge to new knowledge. Thus these relatively strong epistemic relations were to atomized knowledge. In contrast, students rarely considered their lives or everyday experiences beyond educational

⁶ All student names are pseudonyms.

contexts as relevant to learning, suggesting personal experience was less significant. They thus downplayed their personal attributes or characteristics as knowers: relatively weak social relations (SR–).

In terms of pedagogy, the students described their past teachers in China as experts in the content knowledge with the ability to teach this knowledge to students through clear procedures. Such teachers had, according to the students, explicit control over the selection and ordering of content, the rate at which learners accessed this content, and student conduct in classrooms. These practices represent explicit principles of selection, sequencing and pacing of knowledge: stronger epistemic relations (ER+). In contrast, students said they were expected to adopt self-effacing roles, such as following group pacing and only asking questions when sure they would contribute to learning for the whole class. For example, one student described a cardinal rule of classroom behaviour as:

Don't disturb the class. Even if your question is brilliant, the teacher still might not answer you because he/she wants to teach something else first. Only ask questions if the teacher wants you to. If the teacher wants to carry on with the lesson, listen.

(Rachael, focus group 3)

This is to downplay learners as individual knowers: weaker social relations (SR–).

Finally, in terms of assessment, students described the basis of achievement in Chinese education as being made very clear to learners. In brief, success was built, they suggested, on effort, concentration and withholding one's own subjective views. Students stated that a significant part of assessment comprised examinations that required correct, textbook-based answers. To achieve the highest marks, students claimed, one needed to study hard and forego personal opinions that conflicted with standardized answers. The following quote was common from focus groups and interviews:

When I was in China, I never thought the teacher was right all the time, but I couldn't argue with them. Neither could I argue against things written in the textbook. If I had done so, they would have told me to follow what the textbook said anyway. And if I had written my answers on exams according to what I thought, not the book, they wouldn't have been standard, right answers. That meant I wouldn't have got the marks. I couldn't do anything about it.

(Chris, Interview 1).

Such emphasis on learners displaying content knowledge and explicit evaluative criteria again describe knowledge as strongly bounded and controlled: stronger epistemic relations (ER+). In contrast, downplaying by students of personal views represents weaker social relations (SR–).

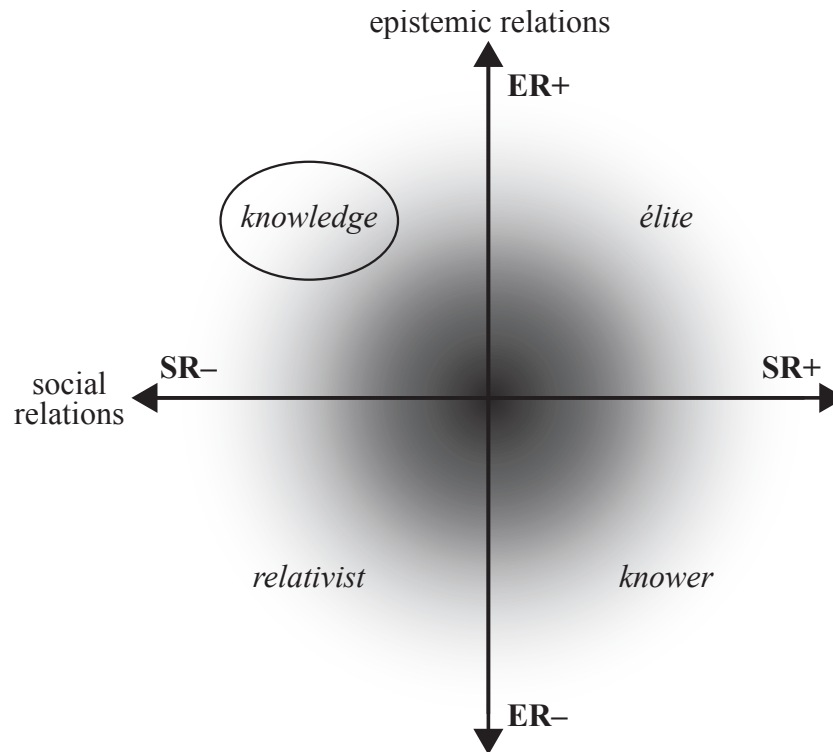


Figure 2: Educational dispositions of the Chinese students – knowledge code

Figure 2 highlights the specialization code of the educational dispositions brought by the Chinese students from their previous education. In summary, their experiences of curriculum, pedagogy and assessment all manifested stronger epistemic relations and weaker social relations. This represents a *knowledge code* (ER+, SR–), in this case manifested as

- curriculum that emphasizes content knowledge and downplays personal knowledge;
- pedagogy emphasizing procedures for delivering teachers' expert knowledge about subject content and downplaying personal dimensions of learning; and
- assessment with explicit criteria for evaluating learners' states of knowledge and that downplays personal measures of achievement.

We now turn to consider the kinds of teaching practices these students encountered in their online teaching at the Australian university.

4. Teaching practices in the online units

When discussing curriculum, teachers at the Australian university blurred boundaries between subject content in the online units they taught and both other subjects and everyday knowledge. Some participants referred to this characteristic as expressing the 'authenticity' of learning. For example, Teacher E explained:

The assignments try to be authentic. Now what I mean by that is we try to situate the assignment in the context in which these people work and live. So if they are a

TAFE teacher teaching cabinet-making,⁷ then they have to think about how their students are learning that task. If they're a university teacher teaching science, then they have to think about their students learning science... and they have to think about their own learning as well.

Teachers emphasized that the curriculum aimed to accommodate the diverse disciplinary and personal backgrounds of students. One teaching strategy they claimed would enable this involved encouraging students to treat reading materials as optional resources rather than compulsory content of a study unit. This meant there was little core content knowledge students were required to learn in these online units. Instead, students were expected to make their own decisions about the relevance of readings to their own interests and practices beyond the educational context. Thus, teachers downplayed boundaries around and control over legitimate knowledge in the educational context: relatively weak epistemic relations (ER-). In contrast, teachers saw every learner as already possessing a wealth of legitimate knowledge by virtue of their experiences beyond education. One teacher noted negatively of the university in general:

What we don't often do with our postgraduate students is recognize that they actually come with a whole range of background and experience and baggage and literature, and what they need is a framework to download that.
(Teacher F).

The teachers emphasized that they recognized this background and personal experience and, moreover, viewed it as meaning students were already legitimate knowers: relatively strong social relations (SR+). In addition, teachers stressed that any content knowledge included in their units was always subject to each learner's *personal* interpretations and that the aim of the postgraduate programmes was to assist learners in creating their own understanding rather than teaching them new knowledge.

In terms of pedagogy, the teachers espoused 'constructivist' methods characterized by downplaying the selection, sequencing and pacing of knowledge and denigrated 'instructivist' methods that emphasized the teaching of knowledge. Teacher B, for example, summarized what was wrong with 'instructivist' ways of teaching:

There was very much a temptation to say, 'Okay week 1, read these and we'll have a discussion. Week 2, read these papers and we'll have a quiz. Week 3, read these papers and then your assignment is due'. They'd [other teachers] have a template of 13 weeks or 14 weeks or whatever. For the kinds of learning environments that I create that's a total anathema, because if you do that you're moving back into an instructivist kind of mode. So you're saying this is what I want you to do this week, and this is what I want you to do the next week. So it becomes sequential and it's directed by the teacher rather than from the student.

⁷ 'TAFE' is short for 'Technical and Further Education' and refers to tertiary institutions offering vocational courses in subjects such as hospitality, hairdressing, carpentry, and so on.

In discussing their relationships with students, teachers defined themselves as facilitators, most of them stressing that they did not claim expert knowledge of the subject content and thus did not intend to act as a 'guru' or 'sage on the stage'.⁸ Instead, some identified their relationships with students as a 'partnership', in which they assumed the role of a 'co-learner' or 'critical friend'. Consequently, the teachers viewed their principal responsibility as creating and maintaining an environment conducive to learner engagement. In short, the teaching of content knowledge was downplayed: weaker epistemic relations (ER-).

Rather than teaching knowledge, the teachers viewed their role as providing minimal guidance and providing online space for discussion among students. They emphasized it was each student's responsibility to organize their own studies and to make the most of any available support. As one teacher summed up:

I think you need to guide in some way, provide some form of pathway [but] if students don't want to use your pathway let them go their own path, but at least you've provided them with some assistance.
(Teacher G)

For example, the teachers generally believed that, given students were already legitimate knowers, they would most benefit from sharing their personal experiences with other students. Thus, they emphasized peer interaction in online discussion that would, they believed, create a learning community among the students. However, student participation in online discussions was often not mandatory in these online units, reflecting the teachers' insistence on student autonomy. This recurrent emphasis on learner choice and self-determined, individual pathways represent relatively strong social relations (SR+).

In terms of assessment, the predominant forms were through what the teachers called 'authentic tasks' that they claimed reflect issues in the real world, various projects and personal reflections. All three methods, teachers argued, required learners to relate educational knowledge to their own real-life experiences. As these were potentially diverse, the assessment downplayed any criteria that might directly compare performances among students. In other words, the assessment tasks recognized a wide variety of performances by students as potentially legitimate. As one teacher argued: 'It's not like learning medicine, you've got to get it right [otherwise] the patient will die. It's not like that. It's more open to interpretation' (Teacher G). Explicit evaluative criteria were thus downplayed in judging student work: relatively weak epistemic relations (ER-). Instead, teachers valued the ability of students to construct their own personal understanding and to reflect on their own learning; for example:

⁸ The expression 'sage on the stage' is often used in constructivist literature to denigrate formal teaching methods (such as lectures) and contrasted with being 'a guide on the side' who facilitates students learning by themselves.

What I want to know is how much *you*, the student, can make the connections between *your* beliefs and *your* theory, *your* beliefs and *your* practices and can *you* share that with me and justify it.
(Teacher C, emphases added)

In other words, the student themselves formed the basis of legitimate insight. This is not to say, though, that ‘anything goes’ – the teachers had a clear sense of the kind of knower they considered legitimate. For them, an ideal learner showed enthusiasm about being there and a willingness to explore, take risks and seek help, as well as to participate and share their experiences in the online discussions. In short, the ideal knower by which the teachers measured student work was independent, self-directed, confident and reflective. The emphasis, therefore, was on specific dispositions of knowers: relatively strong social relations (SR+).

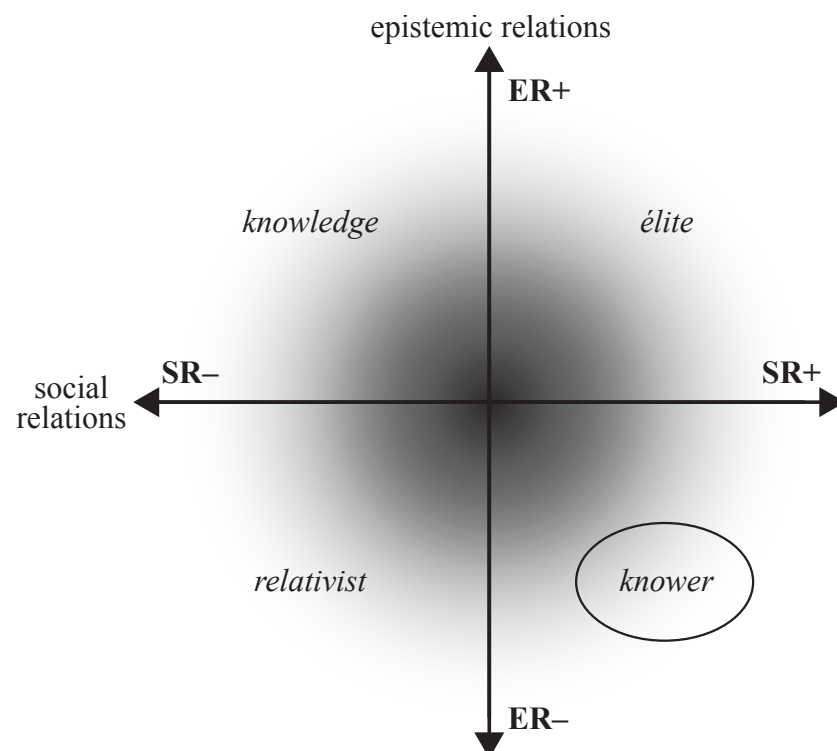


Figure 3: Teaching context – knower code

As shown in Figure 3, the constructivist methods the teachers espoused in interviews and enacted in their units of study embodied weaker epistemic relations and stronger social relation. This is a *knower code* (ER–, SR+), realized in this case as:

- curriculum downplaying content knowledge and emphasizing personal experience;
- pedagogy downplaying teachers delivering subject content or structuring student learning, and emphasizing the need for self-regulating learners to create their own understandings; and
- assessment avoiding explicit evaluative criteria and emphasizing knowers evaluating themselves based on their own criteria.

There are many kinds of knower code based on the form taken by the ideal knower emphasized as its basis (see Maton 2014, Maton & Chen 2016). In this case, the ideal was a *personalized*, *individualized* and *socializing* knower. In other words, legitimate understanding is constructed by each knower on the basis of his or her *personal* experiences through highly *individualized* tasks and *socializing* by sharing their perspectives with other students in an online learning community.

5. Student experiences and practices

Thus far we have analysed the educational dispositions expressed by the Chinese students as embodying a knowledge code and the teaching and learning practices of the educational context as embodying a knower code. This represents a potential ‘code clash’: the measures of achievement expected by the students are fundamentally different to those demanded by the educational context. They represent, in other words, different ‘rules of the game’. However, this is not to say that the Chinese students experienced the educational context as a knower code. As Bourdieu (2000) argues, one must avoid the ‘scholastic fallacy’ of mistaking analysis conducted with the benefit of conceptual tools and objectifying distance for the experience of participants themselves. One must always remember that how actors experience a context is mediated by their dispositions: they see the context through their own codes. We thus now turn to analyse how the students experienced the context.

Focusing on the case studies of Chinese students reveals that the weaker epistemic relations of the curriculum were not only experienced as weaker epistemic relations but also viewed negatively. For example, the students considered solitary reading as inadequate for helping them learn because they were unsure whether their own understanding and interpretations of the content were correct. One student, for example, summarized the effect of solitary reading as:

There are still so many things that I’m not sure about. It’s not like you ask me something, I can tell you exactly what it is. If you ask me something now, I can only tell you what it is according to my understanding. This is the best I can do, and I don’t think this means I’ve learned well.

(Vivian, Interview 6)

More generally the form of pedagogy adopted by the teachers was viewed not as enabling but rather as an absence. The space the teachers aimed to provide for the students was experienced as a vacuum. Students described how they were provided with reading materials and deadlines for the assessment tasks, but then left alone to learn without much guidance by their teachers. ‘This type of learning is self-study,’ one student summarized, ‘You read the readings provided for you. Then you think on your own, and then write essays’ (Megan, Interview 2). This self-study was often described negatively by students, as teaching without a systematic plan and without a supporting structure. The following response is typical of many by the students:

I feel that teachers do not teach in online classes. They raise a lot of questions for us to discuss. What do they teach us? They teach us nothing. They ask us to think, but what if I can't think of anything? I can sit there thinking all day, not sleeping at all, but I still can't think of anything. So I don't think they are teaching me. (Vivian, Interview 3)

Similarly, students expressed considerable concern about a lack of specificity in assessment criteria. Most felt the descriptions of the tasks and requirements were at best 'ambiguous'. One student, for example, argued that students 'are like producers. We produce goods as required. You [teachers] need to give us the standards' (Jennifer, Interview 5). The students also often voiced frustration at not being able to obtain clear instructions from their teachers when they approached them for help.

In short, the students' previous experiences of a knowledge code emphasized for them the importance of stronger epistemic relations (*ER+*, *SR-*), realized as explicit content knowledge, explicit instruction, and visible assessment criteria based on knowledge. They viewed the weaker epistemic relations offered by the knower-code teaching (*ER-*, *SR+*) as a loss of legitimacy. Their experience itself was thus characterized by weaker epistemic relations: a lack of knowledge to be learned.

According to the teachers, their constructivist pedagogy was intended to provide the space for students to express themselves as already legitimate knowers; i.e. a knower code. However, the stronger social relations that underpin the legitimacy of the knower code (*ER-*, *SR+*) were not recognized as such by the students whose knowledge-code dispositions downplayed social relations (*ER+*, *SR-*). For example, the students did not view their own experiences as relevant to assignments and those students who did attempt to draw on their own knowledge often expressed belief that their experiences were inadequate. Similarly, the students dismissed online discussions with other students as 'pointless' because their peers were not experts in the content knowledge. They did not consider students as legitimate knowers whose personal experiences were valuable for the assessment task. Accordingly, none of the students felt they were part of a learning community in the online environment. They repeatedly stated that they felt as if they were doing the online units alone; for example, one student said he felt like the only student in his class and so doubted whether he was learning at all (Chris, Interview 6).

While the students said they longed for a sense of belonging, they all reported lacking sufficient incentive to participate in online discussions. Here again, the Chinese students focused on the absence of stronger epistemic relations: they described online discussions as 'chaotic' and expressed frustration that the teachers did not provide conclusive comments at the end of a discussion or verify whether the claims made by other students were legitimate. As one student stated:

Even if I got a reply from my classmate, it's unlikely that the teacher would post a message afterwards to confirm whether what my classmate said was correct or not. So in this situation ... I still don't know whether the answer is correct. I can

only rely on my judgment to see if the reply makes sense, or to compare all the replies I get, which is still not definite.
(Vivian, Interview 2)

In sum, the knowledge-code dispositions (ER+, SR–) of the Chinese students meant that, on the one hand, they were seeking stronger epistemic relations but were disappointed and frustrated by their absence in the knower-code learning environment (ER–, SR+) and, on the other hand, they did not see the stronger social relations of this environment as legitimate. In other words, they recognized its weaker epistemic relations (though not positively) but did not recognize its stronger social relations: they did not view as legitimate using their own personal experiences and sharing these with their peers. The students thus experienced the educational context not as a knower code but rather as a *relativist code* (ER–, SR–): nothing seemed to be the basis of achievement; there seemed to be no ‘rules of the game’. As depicted in Figure 4, the students perceived a context empty of both legitimate knowledge (weaker epistemic relations) and legitimate knowers (weaker social relations). This relativist code was experienced as a vacuum and, as a result, students reported feeling inferior, insecure, anxious, frustrated, helpless, guilty and depressed (see Chen 2010).

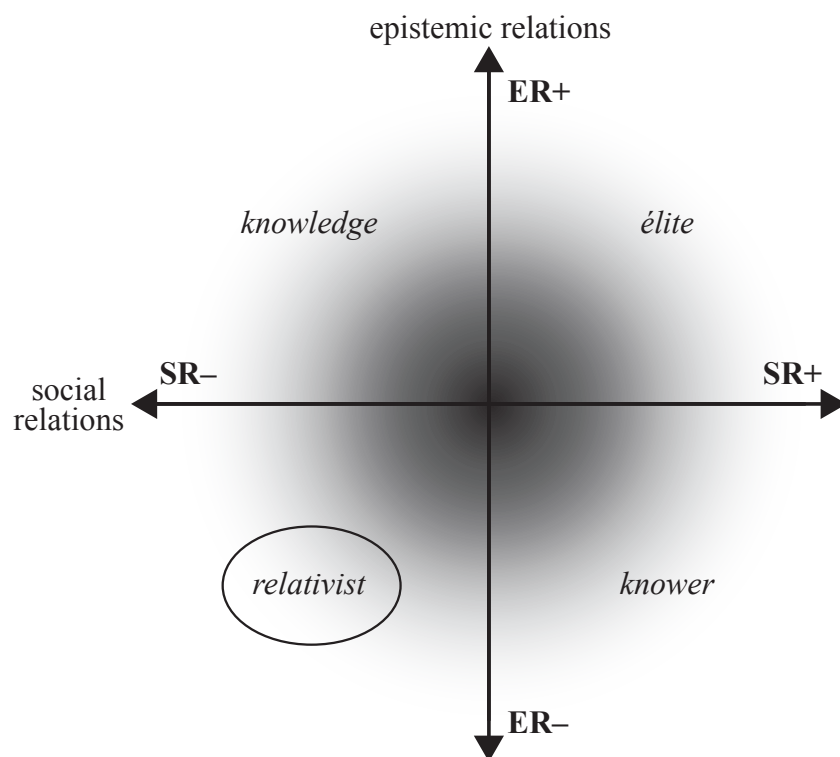


Figure 4: Student experience of teaching context – a relativist code

Faced with a lack of clear ‘rules of the game’, the students typically continued following their knowledge-code dispositions by adapting practices that had served them well in their education in China. Strategies students used to cope with the requirement of using everyday knowledge in their assignments included: ignoring this requirement and

preparing assignments as if they were traditional essays; trying to fulfil the requirement by manufacturing superficial links between the content knowledge and their experiences; considering educational knowledge they had previously learned as representing personal experience; or writing essays that ‘combined and synthesized’, as one student put it (Rita, interview 3), supposedly personal experiences from examples found in the readings. In the online discussions the students reported only reading postings that had attracted feedback from their teachers and said they poured over those remarks intensely for any implications they might have for assessment criteria. The students also tended not to contribute to these discussion themselves. Moreover, despite describing the online units as lacking any clear sense of what was required of them, they continued to state that a successful learner in those units was one who read extensively, conducted a literature review, wrote in an academic style, and demonstrated in their assignments knowledge that addressed all the issues raised in the teacher’s explanation of the assignment topic. In other words, faced with the experience of a vacuum of legitimacy, the students re-emphasized the basis of achievement as embodying a knowledge code: they continued emphasizing stronger epistemic relations and downplaying social relations.

Though useful as coping strategies, these practices left the students often feeling disappointed and frustrated. In terms of curriculum, using previously learned educational knowledge as personal experience in their assignments was viewed by students as simply recycling old knowledge. This was, they argued, a waste of both their time and the opportunity of studying overseas. In pedagogy, as we have mentioned, not engaging with the online discussions left the students feeling extremely isolated and lonely. In assessment, the desire by teachers for students to negotiate assignments was viewed by the Chinese students as reflecting their own failure at understanding requirements. The coping strategies were thus not fulfilling.

6. An invisible knower code

Contrary to what is often claimed by proponents of constructivism, the knower-code practices of the teachers were not empowering for the Chinese students who participated in the study. Indeed, the students felt powerless. As we have discussed, the students experienced the teaching context as a relativist code, manifested as lacking both content knowledge and a sense of community. This was experienced as a limbo, an emptiness devoid of direction and clarity – a total lack of legitimacy. In response, the students adapted their past knowledge-code practices as coping strategies. The result was they did not gain a different educational experience. Despite being overseas, they effectively underwent a more isolated form of their existing educational experiences from China.

At this point it is very important to be clear as to what we are arguing and what we are not arguing. We are *not* stating that these findings show studying in Australia to be a waste of time or a negative experience for Chinese students. The object of study here is not identical with Australian education. The research we have discussed explored a specific kind of teaching and a particular mode of delivery: constructivist pedagogy in postgraduate units that were taught online. Neither this form of pedagogy nor this mode of delivery are universal across Australian universities. One cannot equate Australian

higher education with constructivism or knower codes. There are a range of forms of pedagogy and a variety of specialization codes active in Australian education, depending on the subject area, the institution, the teachers, and a host of other factors. Moreover, the problem for these students was not necessarily the knower code but the form taken by that knower code. As we mentioned above, there are different kinds of knower codes. One aspect of the knower code underpinning the teaching practices in this case was that it rendered itself invisible to anyone who was not already a particular kind of knower.

This is to say that the constructivist strategies used by the teachers in their online units rendered invisible not only the knowledge to be taught and learned but also the knower code itself: the 'rules of the game' were hidden. We have already discussed the invisibility of the knowledge: students could not see what it was they should be learning. In addition, the students could not see how the constructivist pedagogy was intended to contribute to their learning or what their teachers expected of them. Although the students may have heard from their teachers or read in the unit outlines a rationale for adopting this teaching approach, it remained for them a mystery and so they were unable to recognize the required performance in this context. As this suggests, not only was the knowledge invisible but so were the 'rules of the game', the knower code itself.

The reason for this invisibility lies with constructivism. This form of pedagogy does not set explicit guidelines for how learners should engage in their learning, as each student is expected to approach the tasks in his or her own individual way. This suggests that every kind of knower is equal. It gives the impression that every form of engagement is legitimate. However, as we discussed in section 4, that is not the case in reality. The teachers were not espousing or enacting a relativist code. Their teaching was reflected a knower code based on an image of an ideal knower. That ideal was not made explicit to students, but teacher interviews and analysis of their teaching materials showed that they considered some forms of learner engagement more appropriate than others. In other words, the teachers had in their minds an image of what students are like or should be like. Constructivism is tacitly based on an image of a student which is universalized: it espouses a notion of learning that is generic and viewed as applicable to all students. That this image is a reflection of only particular sections of society and particular kinds of social background is hidden. For these teachers all students are or should be capable of personalized, individualized and socialized learning. As discussed in section 4, their ideal learner was willing and enthusiastic to explore, take risks, seek help, participate online, and share their personal experiences with other students. Teachers thus expected students to be independent, self-directed, confident in this form of learning, and publicly reflective about themselves. Put another way, they expected students to have very different dispositions to those expressed by the Chinese students who participated in this study. Moreover, the teachers did not make this expectation explicit, for to do so would be to break a key tenet of constructivism by setting rules for how learners should engage in their learning.

In short, the stronger social relations underpinning constructivist pedagogy are hidden. For example, a fundamental principle of this pedagogy is that learning does not (or should not) follow pre-determined stages but rather should follow a learner's individual

development. This principle contains a hidden expectation: that the learner is capable of and comfortable with externalizing his or her learning activities so the teacher can provide personalized evaluation – it expects students to make their thoughts and feelings available for assessment. In this study, this expectation was manifested as the need for students to participate in as many activities in the online learning environment as possible, to enable the teachers to engage with them as individual knowers. However, online participation was not compulsory. Students were expected to know without being told that maintaining their visibility in the online environment was crucial to success and that this visibility needed to be of a particularly reflective kind. Thus, those students who already knew the tacit ‘rules of the game’ fulfilled the expectations of teachers and those students who were the ‘wrong kind of knower’ (Maton 2004), including the Chinese students, did not recognize what was tacitly required of them.

7. Conclusion

In contrast to most studies, our analysis does not attribute the problems experienced by these Chinese students to their previous upbringing or education. Rather, LCT reveals they result from a code clash between their dispositions and the context and, in particular, the invisible nature of the knower code dominating that context. The problem is thus not limited to one specific nationality of students – it is a question of codes. In a study of blogging in English using specialization codes, for example, Chen (2015) shows how a knower code can disadvantage those Taiwanese students whose dispositions are knowledge code, and Chen *et al.* (2011) suggest that re-analysis of studies of North American, Portuguese, Australian and South African students taught using constructivist pedagogy reveals similar issues. In short, using LCT concepts highlights that students with knowledge-code dispositions by virtue of their background often struggle with this knower-code pedagogy, whatever their nationality.

By analysing educational outcomes in a relational manner, LCT also reveals that these negative outcomes are not inevitable. Our analysis here suggests ways forward that would avoid the code clash, for while dispositions shape the ways actors see and understand their contexts, they may also be analysed, appreciated and engaged with. This study suggests that if teachers who wish to use knower-code practices make explicit the knower code underpinning their teaching and thus make visible the ‘rules of the game’, then students with knowledge-code dispositions will be more able to recognize what is required of them. Furthermore, if teachers also provide support in engaging with the learning environments in the knower-code way they expect, such as through modelling, then students with dispositions of different codes will be more able to realize the kind of practices that enable achievement. In the case we studied, the constructivist beliefs of the teachers ruled out making these ideas visible or providing explicit guidance. However, the analysis we have outlined offers a strong case for making clear the ‘rules of the game’ for students whose dispositions are different to those of the context. It also provides the tools for doing so.

To return to our starting question of why some students are more successful in education than others, one reason is that the legitimation codes brought by some students match those of their educational context while the legitimation codes of other students clash with their context. In this chapter we focused on specialization codes, but one can also use other forms of legitimation code (such as semantic codes) to explore further aspects of these organizing principles.⁹ As we have done in this chapter with specialization codes, each set of LCT concepts can be used to analyse: the dispositions actors bring to a context; the context within which they are situated; the ways in which they perceive that context; and their practices. Each of these phenomena can be coded and related together to help explain the experiences and practices of actors. Moreover, the resulting analysis can then help inform future practices in ways that enable more students to succeed in a greater diversity of contexts. We can, for example, design pedagogic interventions to teach students how to recognize different codes and realize the kinds of practices each code considers valuable (see, for example, Macnaught *et al.* 2013). Just as significantly, LCT concepts can be used to explore and inform numerous other aspects of learning and living, including not only curriculum, pedagogy and assessment but also socialization practices, parent-child interactions, organizational structures, and so forth. The concepts are not locked into any specific object of study and so allow us to explore and relate together a wide range of phenomena in order to engage with the complex problems of the twenty-first century. Using LCT we can thus not only address the difficult question of why some students are more successful in education than others but reach beyond education to explore the bases of achievement in all avenues of life.

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⁹ See Maton (Chapter 3, this volume) for semantic codes.

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	EPISTEMIC RELATIONS (ER)			SOCIAL RELATIONS (SR)		
	Concept manifested – Emphasis on:	Indicators	Example quotes from empirical data	Concept manifested – Emphasis on:	Indicators	Example quotes from empirical data
Curriculum	content knowledge	ER+ Content knowledge is emphasised as determining form of legitimate educational knowledge.	The information in the textbook – decided by the teacher – was what a study unit was all about.	personal knowledge and experience	SR+ Personal experience and opinions are viewed as legitimate educational knowledge.	[Students] actually come with a whole range of background and experience ... what they need is a framework to download that.
		ER– Content knowledge is downplayed as less important in defining legitimate educational knowledge.	We ... show them ... digital repositories that they need to go to in order to access those readings that are relevant to their context.		SR– Personal experience and opinions are downplayed and distinguished from legitimate educational knowledge.	Online discussion is chaotic, and is like you conduct a survey and everyone tells you their opinions. That's all. It's different from a class.
Pedagogy	the teaching of content knowledge	ER+ Procedures for learning content knowledge are explicit to learners and emphasised as determining form of pedagogy.	[The teacher] extracts the best things from what he or she knows and gives this to you in class, and then offers you instructions on the tasks you need to complete.	personal dimension of the learning process	SR+ Individual learners' preferences are explicitly emphasised as determining form of pedagogy.	So negotiate to learn in a way that suits them ... it's constructing your own learning in a way that is helpful for you.
		ER– Procedures for learning content knowledge are implicit to learners and downplayed as not significantly shaping form of pedagogy	The teacher only points out the things you need to read... But as to how to think, how to read and understand, it's your own business.		SR– Individual learners' preferences are downplayed as not significantly shaping form of pedagogy.	Even if your question is brilliant, the teacher still might not answer you because he or she wants to teach something else first.
Assessment	explicit criteria	ER+ Explicit evaluative criteria are emphasised in judging student performances.	When a Chinese child paints the moon blue, the teacher will correct the child, saying that the moon shouldn't be blue.	self-evaluation	SR+ Evaluation of legitimacy of student performances resides in beliefs of individual learners.	What's valid for you and what's valid for me are two different things, aren't they?
		ER– Explicit evaluative criteria are less significant in judging student performances.	It's not like learning medicine, you've got to get it right [otherwise] the patient will die. It's not like that. It's more open to interpretation.		SR– Student performances are judged against shared criteria external to the learner.	I am a 'test-taker.' If the teacher doesn't give me a standard, I don't know what to do.

Table 2: A translation device for specialization codes and Chinese students' experiences (Chen 2010: 83)