Conformative and disruptive contributions in *Skills for Life* classrooms

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Abstract

This study examines how adult numeracy students drew on their informal knowledge in their classrooms; using audio-recordings of naturally-occurring discussions as they worked together to solve mathematical problems. Analysis of the recordings not only reveals the knowledge which the participating students contributed to their discussions, but also illuminates how they responded to, and appeared to value, each other’s contributions. Although students were found frequently to share knowledge about curricular and examination requirements, they rarely shared knowledge about out-of-classroom numeracy practices, even when their learning activities gave them opportunities to do so. Drawing on Bourdieu’s notions of habitus and field, it is suggested that students’ reluctance to draw on their out-of-classroom practices is due to the historically-constituted values which they themselves place on different types of knowledge. A typology of conformative and disruptive knowledge contributions is proposed, which attempts to reconcile transformative ideals with the constraints of the contemporary classroom.

Although numerous studies suggest that adult learners possess repertoires of informal practices and competences which may not be evidenced by formal qualifications, this informal knowledge is often found to be under-utilised in adult literacy and numeracy classrooms (Civil, 2003; Baker, 2005; Wallace, 2006; Street *et al.*, 2006). Although this has sometimes been attributed to a lack of opportunities provided by the learning environment (for example, Baker and Rhodes, 2007), here I suggest that adult learners themselves may choose not to use their informal knowledge, even when given opportunities to do so.

This article reports on research in adult numeracy settings in England, in which audio-recordings of classroom discussions were used to investigate the ways in which students drew upon their informal knowledge as they worked together to solve mathematical problems. My aims in this article are two-fold: to present findings which suggest that adult learners themselves may privilege curricular and other conformative knowledge over their own informal knowledge; and to argue that this privileging of conformative knowledge by adult learners is both constituted by, and constitutive of, a ‘schooled habitus’.
I begin by reviewing models of informal knowledge in adult numeracy and literacy learning, particularly in relation to the policy context in England. I then present and analyse a key episode of classroom discussion, which exemplifies the different types of knowledge which students shared with each other during mathematical learning activities, and the ways in which they appeared to value each type of knowledge contribution. I use my analysis to propose a typology which attempts to recognise both transformative ideals and the constraints of the contemporary classroom.

Although I suggest that adult numeracy and literacy learners themselves may choose to reject their own informal knowledge, I emphasise that this is not intended to reinforce deficit views of adult learners, nor to imply that these are conscious choices. Rather I suggest that such beliefs and values are imposed upon learners, through their prior and current educational experiences.

Background

Perspectives on informal knowledge

Over the last two decades, in contrast to prevailing policy discourse, research in many countries has suggested that learners in adult basic education have access to informal knowledge and practices which are not legitimated by academic qualifications, and which may not be recognised within the official, recontextualised discourse of the curriculum. Within this research paradigm, numeracy and literacy are seen to be practiced differently in different domains, only one of which is the classroom. Classroom learning is often found not to reflect everyday and workplace practices, nor to be relevant to learners’ interests and needs (e.g. Heath 1983; Street 1984; Lave 1988; Saxe 1988; Nunes et al, 1993; Barton and Hamilton, 1998; Baker, 1998; Civil, 2003; FitzSimons, 2005). Moll et al (1992) and Gonzalez et al (2005) refer to ‘funds of knowledge’, the repertoires of informal knowledge, skills and practices possessed by households, communities and individuals, which offer potential to be valued and drawn on in the classroom.

The concept of ‘funds of knowledge’ ... is based on a simple premise: people are competent and have knowledge, and their life experiences have given them that knowledge (Gonzalez et al, 2005, p. x).

Baker (2005) and Baker and Rhodes (2007) have developed the concept further specifically for adult numeracy learners, and suggest that ‘broader’ funds of knowledge to be drawn on in the classroom might include:
• knowledge, experiences, histories, identities and images of themselves;
• attitudes, dispositions, desires, values, beliefs, and social and cultural relations;
• relationships with learning, teachers and mathematics itself;
• and numeracy practices beyond the classroom (Baker, 2005, p. 16)

Baker and Rhodes conclude, however, that teachers do not always make full use of these funds of knowledge, and point out that dominant approaches to teaching adult numeracy and literacy tend to be about assessing what learners cannot do. They suggest that instead teachers should work with what learners can do, taking this as a starting point for gaining the skills and knowledge required in formal classrooms (Baker and Rhodes, 2007).

In Oughton (2010), I raise the question of whether all informal knowledge offers transformative potential in the classroom, and suggest that teachers (however well-intentioned) are in danger of imposing their own values when they select which of their students’ informal knowledge to privilege as ‘funds of knowledge’.

Habitus and ‘Schooled habitus’

Hodkinson and colleagues argue that the distinction between formal and informal learning is not always clear cut, and that to distinguish between the two is sometimes unhelpful (Hodkinson, Colley and Malcolm, 2003; Hodkinson, Biesta and James, 2004). Instead they draw on Bourdieu’s concepts of habitus and field to propose a more holistic cultural theory of learning which takes into account the mutually-structuring relationship between individuals and the context in which learning takes place.

Bourdieu uses the term *habitus* to describe the systems of durable and transposable dispositions which individuals develop in response to the determining structures, or *fields*, they encounter, such as social class, family and schooling, and which may be seen as a tendency to act, think and perceive in a certain way (Bourdieu 1977; Bourdieu and Wacquant, 1992). The concept of habitus recognises the limitations of individual autonomy while rejecting the notion of complete determinism by social factors, and accounts for action that does not seem to be guided by ‘rational’ motives. The choices of the individual are guided by habitus, without being reducible to prescribed rules.

While habitus is seen as durable, it is not necessarily permanent, and may be modified by later experiences. Nonetheless, Bourdieu notes a hysteresis, or lag, which may occur between an encounter with new experiences and the resulting changes in habitus.
Bourdieu and Wacquant (1992) also suggest that for many individuals, social conditions encountered later in life will only serve to confirm early habitus.

Education can be seen as having a central role in forming and transforming habitus, with formal schooling as an example of a field which reinforces and legitimises a certain kind of habitus. A range of terminology is used to describe the different types of habitus which may result from education, which, while sounding superficially similar, are nuanced in different ways. ‘School’ (rather than ‘schooled’) habitus is often used to describe the collective habitus or ethos associated with a school; while a ‘cultured’, ‘scholastic’ or ‘academic’ habitus is closely aligned with cultural capital (Reay, 1995; Bourdieu 1975; Delamont, Atkinson and Parry, 1997; Bourgois, 2002). By contrast, the less frequent term ‘schooled’ habitus tends to be used in critical analyses which suggest that the habitus has been imposed upon the individual by the school system (e.g. Ladwig and Gore, 2000) in a manner which may, perhaps, be regarded as symbolic violence (Bourdieu and Passeron 1977). The term implies greater structure and less agency, and suggests a habitus which may not be relevant to the individual’s practices outside the field of the school or classroom (Street et al, 2005).

Adult students thus enter their numeracy classrooms with a habitus that will influence the way they think and act. Their habitus may need to change in order to adapt to and negotiate this new field, but the durable nature of habitus can make it difficult to adapt quickly (Sarangi, 1996; Boaler, 2007; Bourdieu 1977; Bourdieu and Wacquant, 1992). Barton et al (2006, p. 17) describe the challenges faced by learners entering the field of such classrooms:

> Given that many people had these negative associations with education, we found that learning and, particularly, participating in formal structured learning meant more to people than just acquiring new skills. It could mean entering a different culture or taking on a whole new identity, a process that could be experienced as difficult and sometimes even as dangerous.

Habitus can thus be seen as historically-constituted, and as reflecting the inter-relationship between past and present. For example, Swain (2007) describes how adult numeracy learning can lead to a transformation of habitus in terms of dispositions towards mathematics. Conversely, Wedege discusses motivation and resistance and suggests that mathematical learning for an ulterior goal (such as to gain a qualification as a gateway to vocational training) is not as transformative as mathematical learning for its own sake (Wedege, 1999; Evans and Wedege, 2004).
Barton et al (2007), following Reay (1995, 2004) discuss the relationship between habitus and an individual’s perceptions of the possibilities of actions and thought available to them:

Habitus shapes the possibilities that are perceived to be open to any individual within any given socially structured field of activity … It generates a repertoire of possible actions and also rules out some seen as being impossible (Barton et al, 2007, p. 21)

In my discussion later in this article, I examine how the participating students’ habitus, including their schooled habitus, might influence their choices about which knowledge contributions to make in the classroom, and the way in which they responded to those of other students in the group.

The Field of the Adult Numeracy Classroom in England: ‘Skills for Life’ and the Core Curricula

Bourdieu and Wacquant (1992, p. 104) propose a three-level system of analysis for the ethnographic study of field.

First, one must analyze the position of the field vis-à-vis the field of power … Second one must map out the objective structure of the relations between the positions occupied by the agents or institutions who compete for the legitimate form of specific authority of which this field is the site. And, third, one must analyze the habitus of agents, the different systems of dispositions they have acquired by internalizing a determinate type of social and economic condition.

The adult numeracy classroom in England is a field currently dominated by two structuring, and sometimes conflicting discourses, creating a tension which teachers and students must negotiate. On one hand they are subject to the regulative discourses of policy, particularly the Skills for Life\(^1\) reforms introduced in 2001. On the other hand, there is a social-constructivist pedagogic discourse, officially-endorsed and extensively promoted to teachers, advocating collaborative groupwork and exploratory discussion in mathematics classrooms.

Looking first at the regulative policy discourse, the Skills for Life strategy (DfES, 2001) provided promotional campaigns and substantial increases to funding and provision, new core curricula and nationally-recognised qualifications for adult numeracy, literacy and language (QCA, 2000; BSA, 2001a; 2001b). While the reforms significantly increased participation and achievement of qualifications (Rhys Warner and Vorhaus, 2008), they have also been critiqued for their emphasis on targets and economic effectiveness, and for the deficit views constructed of adult learners (for example Papen, 2005; Hodgson et al, 2007; Oughton, 2007).
The knowledge legitimated as ‘valid’ in *Skills for Life*\(^1\) classrooms is set out in the core curricula (BSA, 2001a; 2001b), which have been central to the strategy. Although the curriculum documents claim not to be prescriptive, funding is dependent on the achievement of nationally-recognised qualifications based on curricular content, thus rendering this content obligatory rather than optional. A resulting increased emphasis on preparation for assessment and accreditation has been noted in *Skills for Life* classrooms by Rhys Warner and Vorhaus (2008) and Cara *et al.* (2008). The influence of a prescribed curriculum on beliefs and practices in *Skills for Life* classrooms is noted by Ivanič and Tseng (2005, p. 13), who describe how:

Beliefs can enter the classroom indirectly by being inscribed in the syllabuses, curriculum documents and learning/teaching resources that are used there. In this way, policymakers, commercial publishers and practitioners devising teaching materials shape classroom pedagogy and learning outcomes.

However, alongside this regulative discourse, and sometimes in conflict with it, there has also been a transformation in pedagogic practice. Classrooms traditionally characterised by either individualised learning or teacher-led transmission are shifting towards pedagogies based on social-constructivist theories of learning, including collaborative groupwork, discussions between learners, ‘rich’ tasks and a focus on understanding rather than answers (DfES, 2005; 2007). Although the new approaches ostensibly have little relationship to regulative discourse, they are officially endorsed by Ofsted\(^2\) (2006; 2011) who found that significant factors in high achievement included:

...teaching that focuses on developing students’ understanding of mathematical concepts and enhances their critical thinking and reasoning, together with a spirit of collaborative enquiry that promotes mathematical discussion and debate (Ofsted, 2006, p. 5)

**Methodology**

The data presented here comprises audio-recordings of adult numeracy students’ naturally-occurring classroom discussions. In order to collect naturalistic data, I took advantage of the recent increase in the use of collaborative groupwork in adult numeracy classrooms in England (discussed above), during which students work together in small groups to solve mathematical problems with little input from the teacher. Recordings of the discussions arising from such groupwork afford privileged insights into the students’ own experiences of learning which would not be available by observing teacher-led interaction alone. This method not only reveals examples of the knowledge which the participating students
contributed to their mathematical problem-solving, but also illuminates how the students responded to, and appeared to value, each other’s contributions.

Above I have described habitus as historically-constituted, and as reflecting the inter-relationship between past and present. One way to examine the habitus of adult numeracy learners might therefore be through a life-history approach (for example Wedege, 1999; Swain, 2007). By contrast, a naturalistic, ethnographic approach to data collection provides only a ‘snapshot’ of the participants’ life trajectories. It can nevertheless be argued that current practices disclose traces of habitus (Nash, 1999; Rowsell, 2000; Pahl, 2002):

Habitus has a history and discloses the traces of its origins in practice. In this ideal conception, habitus thus unites the past and the present for, while being the product of early experience, it is subject to the transformations brought about by subsequent experiences (Nash, 1999, p. 176)

Here I thus take talk as a transitory trace of habitus. I draw on a set of methods and epistemologies known as linguistic ethnography, which involves the recording and analysis of naturally-occurring talk (and other interaction) in order to learn about the social settings and structures within which that talk takes place, and the ways in which these structures shape, and are shaped by, discourse.

Linguistic ethnography generally holds that, to a considerable degree, language and the social world are mutually shaping, and that close analysis of the role of language can provide both fundamental and distinctive insights into the mechanisms and dynamics of social and cultural production in everyday activity (Rampton et al, 2004, p. 2).

The Teacher, the Students and their Classroom

The participating numeracy teacher was chosen because of her commitment to collaborative learning activities which would generate suitable discussions as data without requiring any intervention. Two of her classes, in which the students participated well in groupwork, were selected for data collection.

The classes took place weekly in two adult community education centres in a local authority in the north of England; centres which offered free literacy and numeracy provision to any adults lacking prior qualifications in English or mathematics. The participating classes comprised between eight and twelve students, aged between 20 and 55 years old and predominantly, but not exclusively, women. As a requirement of the provision, all students were working towards a nationally-recognised qualification; for most this was a National Certificate in Adult Numeracy, at either Level 1 or Level 2. While I would resist the notion of a ‘typical’ classroom, wide experience as a teacher-educator in this sector leads me to
suggest that the participating classes were by no means untypical in respects other than their effective use of groupwork. Broader ethnographic accounts of similar classrooms may be found in Appleby and Barton (2008), Rhys Warner and Vorhaus (2008) and Cara et al (2008).

Working in small groups, the students undertook a variety of mathematical learning activities designed to promote discussion. Additionally, they were encouraged to work in groups on more conventional mathematical worksheets and assessment materials, generally comprising traditional word problems, so preparing them for formal examinations. The students supported each other during all these activities, calling on the teacher’s help only as a last resort.

**Data Collection, Coding and Approaches to Analysis**

The aim was to record discussions which were as naturalistic as possible, and I carried out fieldwork in the classroom as a non-participating observer. In accordance with the naturalistic, rather than transformative, aims of this study, no intervention was requested or made to the learning activities already planned by the teacher, and no activities were included, omitted or adapted for research purposes.

Mobile phones were used as audio-recording devices, placed unobtrusively on the classroom tables. Since the students often placed their own mobile phones on table-tops during classes, they were regarded as ‘part of the furniture’ and participants tended to ignore them. Labov (1972) furthermore suggests that speakers’ discourse tends to become more natural when they are intensely engaged in the subject under discussion, as the students were in their mathematical problem-solving.

Participants were audio-recorded (with their informed consent) during their usual classroom activities. The phones were set to record, and left unattended on the tables around which the students gathered for collaborative groupwork. Students seemed quickly to forget that they were being recorded, and their talk appeared to become naturalistic within a few minutes of the start of each recording. Recordings were supplemented by field notes made during observation, and photographs and photocopies were taken of learning materials used. The audio-recordings were then transcribed for analysis, using the field notes to enrich the transcription where relevant.
Eleven hours of recorded discussion were collected over two academic terms and were transcribed in full, providing a rich source of data with potential for analysis according to a variety of cognitive and social perspectives. An initial analysis was made using interpretive comments written in a column alongside the transcription (Wolcott, 1994). This was used to draw up a set of codes to identify and categorise knowledge contributions shared by the students. During an iterative process of listening again to recordings, and re-reading and revising transcripts, these codes were added alongside the transcripts in a third column, and reviewed and grouped into clusters of codes and sub-codes. In accordance with the research aims, my analysis focussed on the knowledge contributed and shared by students with each other, rather than that coming directly from the teacher.

The extract presented below was key to my analysis, since it demonstrates how two students attempted to make very different contributions to a group discussion about measuring instruments, and how these different types of contribution were evaluated by other members of the group. It may thus be regarded as a ‘telling case’, which helped to develop a more critical framework for analysis of further data collected in the study (Mitchell 1984, Roberts, 2006).

**Findings from Student Discussion**

*Extract 1: Categorising Measuring Instruments*

Extract 1 below is taken from a discussion by four students – Abigail, Donna, Sally and Judith – as they worked together on a task intended as an introduction to measurement. The group was given a set of fifteen cards depicting instruments used for various types of common measurements (DfES, 2007) (see Appendix for an illustration of these cards). The teacher asked the students to sort the cards into categories in any way that seemed appropriate to them.

Extract 1:

1. Teacher: [Concluding her introduction to the activity] There isn’t a right or wrong answer.
2. [Leaves the students to start the activity]
3. Abigail: Well, obviously, the stopwatch and the clock are going to go together,
4. Aren’t they?
5. Donna: Yeah, so if we put that with that stopwatch
6. And put them together
7. And then – weight –
8. Sally: What about the scales?
Donna: Scales – That’s probably weight, right?

Abigail: That’s the same isn’t it, ‘cause it’s – you’re measuring

Donna: Measuring. And that –

Abigail: Or are we going to do it a bit different?

Donna: No that’s fine. No that’s fine

Er, then measuring the

Sally: Length

Donna: That would be (. ) That petrol pump would go with that, then, wouldn’t it?

Sally: Yeah, so would the measuring spoon

Donna: That one would go there

Pedometer would go there

Sally: There you go

Donna: What you thinking? [to Judith] I mean you could

Judith: (...)

Abigail: We don’t want to do it big amounts or small amounts, do we?

Donna: No

Judith: Definitely (want to do) capacity and weight

(...)

Donna: [to Abigail] I know what you’re saying.

So things that you put on, on scales. Like these

Abigail: Well, yeah

Donna: And then, then

Abigail: They are going to be used for – for people, aren’t they?

Donna: Yes

Abigail: So they could kind of be put together, couldn’t they?

There both going to be like, heavy amounts

Really, aren’t they, d’you know what I mean?

Compared to that and that, they’re going to be totally different aren’t they?

Donna: I think that yeah, you could sort of separate them off like that, couldn’t you, ‘cause

[to Judith] What do you think?

Judith: A bit like capacity – liquids

And then weights – solids

Donna: Yeah

Judith: If that makes sense

Donna: Yeah, no, yeah, I think that’s a good way – er

A good way of doing it

Judith: I think we’ve done it right

Donna: Yeah, she did say there was no right or wrong way

It was just how we felt we could group them

The discussion is eventually resolved in favour of Judith’s contribution, and the students sort their cards according the curricular categories of length, weight, capacity and time.

Although all four students participated in the exercise of categorising measuring instruments, I focus here on Abigail and Judith in particular, who contribute two contrasting types of knowledge to the discussion. Abigail contributes her knowledge of out-of-
classroom measurement practices, suggesting that the measuring instruments might be used for ‘big amounts or small amounts’ (line 24) or that some of them are going to be ‘used for people’ (line 32). By contrast, Judith contributes her understanding that they are expected to categorise the measuring instruments into the curriculum-based categories of weight and capacity (lines 26, 40 and 41), which are listed as specific and discrete elements in the Adult Numeracy Core Curriculum (BSA, 2001a; LSIS, 2009):

MSS1/E3.6: Read, estimate, measure and compare weight using common and standard units
MSS1/E3.7: Read, estimate, measure and compare capacity using common and standard units (BSA, 2001a, p. 60)

Note that Abigail’s contributions are made tentatively; she speaks of wider possibilities but her suggestions are presented as questions (line 13), or using question tags (lines 24, 32, 34 and 37). This may be compared with the tenor of Judith’s suggestions, which are specific, declarative and, particularly in line 26, expressed with a high degree of certainty.

Donna’s role (and, to a lesser extent, Sally’s by her complicit silence) becomes that of mediator and evaluator of the two contributions. Judith’s suggestion is evaluated by Donna as a ‘good way’ (lines 44-45), and Judith herself expresses her belief that they have ‘done it right’ (line 46). Abigail’s disruptive suggestion that they ‘do it a bit different’ (line 13) is dismissed by Donna in line 14. Although Donna tactfully and diplomatically acknowledges Abigail’s contributions (lines 28 and 38), her repeated elicitation of Judith’s opinion (lines 22 and 39) suggests that she feels that Judith’s contribution is more valid. The discussion is eventually resolved in favour of Judith’s contribution and the cards are sorted according to curricular categories.

Thus in this episode, the students have been given the opportunity to draw on their informal knowledge of measurement practices in order to categorise the measuring instruments in any way they wanted. They have been assured by the teacher that ‘there isn’t a right or wrong answer’ (line 1). Nonetheless, they choose not to make use of their knowledge of out-of-classroom practices, and instead conform to curricular discourse.

Abigail’s and Judith’s contributions have been in tension throughout their discussion. Abigail brings her knowledge of out-of-classroom measuring practices, which tends to disrupt the expectations of adult numeracy classrooms, and thus has the potential to broaden students’ perceptions of what is possible in terms of thought, discourse or classroom activity; whereas Judith brings her knowledge of the curriculum, which tends to
conform to these expectations, and thus tends to limit or constrain students’ perceptions of the possible.

Note that it is the contribution which has the potential to be disruptive, rather than the knowledge itself. It can probably be assumed that Judith and Abigail both possess knowledge of out-of-classroom measurement practices; it is their different choices about whether to contribute this knowledge to the discussion which is of significance here.

I have termed these two categories of knowledge contribution ‘disruptive’ and ‘conformative’, and found that this categorisation could usefully be applied to other examples of the knowledge shared in the classroom by the participating students. In the remainder of this section, I examine further examples of how students seemed to value curricular (conformative) knowledge over informal (disruptive) knowledge.

**Further Examples of Conformative and Disruptive Knowledge Contributions**

As described above, the students’ knowledge contributions throughout the data were categorised into *disruptive* contributions, which tended to broaden students’ perceptions of the possible, and *conformative* contributions, which tended to constrain those perceptions. Examples from my data in each category are summarised in Table 1 below.

The analysis showed that conformative contributions were far more prevalent than disruptive contributions throughout the eleven hours of recorded classroom discussion, and that the students rarely drew on their out-of-classroom numeracy practices to solve mathematical problems.
Conformative Knowledge Contributions

Many of these examples, particularly those associated with traditional word problems, and with the examination process, appeared repeatedly throughout my data:

- Curriculum discourse, with classroom activities labelled using curricular terminology:
  - When writing her learning record, a student chose the curriculum phrase ‘common measures’ to describe the subject of their activities that session.

- Expectations of traditional, context-based mathematical word problems. The students did not share experiences of the ‘real-life’ contexts in which problems were set, but instead their understanding of expected responses, for example:
  - that correct answers were likely to be tidy, recognisable numbers;
  - that they should not question or critique the contexts in which the word problems were set, even if those contexts were unrealistic;
  - nor should they consider any of the complexities that might affect a solution in real-life (Oughton, 2009).

- Strategies for examination success. Some students had recently taken similar examinations, and were thus in a position to share their own direct experiences with others, such as:
  - Opinions about the likely content of the examination paper;
  - Strategies for making the most of the time allowed to complete the paper;
  - Administrative arrangements for entering, attending and receiving results of examinations.
  - Advice about making childcare arrangements for the examination (including insights which the teacher might not be in a position to provide).

Disruptive Knowledge Contributions

These were rare contributions, and each example was unique in its occurrence within my data:

- Understanding and use of informal numeracy practices
  - A student used her own 500ml drinking water bottle to illustrate the relationship between millilitres and litres to a fellow student.
  - A student who worked in the construction industry shared her experiences of mixing concrete in the right ratio.

- Willingness to critique the relevance of ‘contexts’ presented in classroom learning materials when they did not reflect real-life practices (note that this did not happen when students were working on traditional word problems), for example:
  - Students responded with mocking humour to an exercise which required them to estimate the weight of a mosquito and the weight of an elephant.

- Familiarity with popular culture:
  - In an exercise on measurement of body size, the students engaged in an intense discussion about how the extreme thinness of some female celebrities can put pressure on other women regarding their own body sizes.

- A critical awareness of social issues:
  - students critically discussed unequal wealth distribution, one remarking disparagingly that she ‘wouldn’t know what to do’ with so much money (see extract below)

<table>
<thead>
<tr>
<th>Table 1: Examples of Conformative and Disruptive Knowledge Contributions</th>
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There were some knowledge contributions which proved harder than others to classify into one of these two categories. For example, discussions about their children’s schooling or childcare arrangements during examinations seemed to represent an intersection between classroom and out-of-classroom discourses that was at once illuminating and productive.
Nonetheless I eventually categorised such contributions as conformative, since they were only meaningful within the regulating structures of the curriculum or assessment processes.

Several of the examples of conformative knowledge contributions were frequent recurrent themes throughout the students’ discussions, particularly those associated with solving traditional word problems and with the examination process. By contrast, the disruptive contributions were rare, and each type of occurrence was unique within my data.

**Extract 2: Distortion of Mean Wages**

Conformative discourse was far more prevalent throughout the recordings, but nonetheless there were occasional instances in which students did draw on their out-of-classroom knowledge and practices during their work, and these were notable not only for their rarity, but for the potential they showed to disrupt and transform students expectations about discourse and meaning in the classroom.

In order to illustrate transformative potential of disruptive contributions I present an example in more detail here (Extracts 2a and 2b below). This episode occurred during an activity to demonstrate how the mean of a set of data can be distorted by asymmetric outlying values; in this case how the mean salary in a small company might be distorted by one very high salary. The teacher distributed to each student at random a card showing a salary which was to be regarded as theirs. The cards showed salaries alone, ranging from £10,000 to £100,000. No details of job titles or roles were provided, but despite this, and although not directed to do so by the teacher, the students spontaneously seized on the opportunity to role-play, using their knowledge of typical salaries to match the cards to employee roles:

**Extract 2a:**

Teacher: They’re meant to be your wage.
We’re all working in a factory or something.
...
Donna: [seeing Judith’s card] That’s alright [laughing]
Judith: Thank you
Donna: Ooh, that’s even better.
You’re supervisor.
[to Abigail] What’ve you got?
...
Have you? Oh she’s the director.
Sally: Now that’s just not fair.
The spontaneous way in which the students began to role-play suggests that they felt unconstrained by the expectations of more traditional classroom activities. They demonstrated a level of playful knowingness about salary distribution and a satirically mocking and critical attitude to wealth. The students then went on to calculate the mean salary and compare it with the median salary, and the role-play enabled them later to make sense, indicated by their laughter in the extract below, of their eventual conclusion about how the mean had been distorted by the largest salary.

Extract 2b:

Teacher Well, looking at those wages
    How many people are actually over twenty-six thousand pounds?
Students One
Teacher Only the one
    So that mean’s been distorted, by an extreme value,
    Somebody getting a lot more than everyone else
Students [laughter, apparently directed at Abigail]
Teacher So that’s the problem with the mean
    If there are very small numbers or very big numbers it distorts it
    And makes it look that the, um, the typical wage is bigger than it actually is
Judith Mm, it’s a lot bigger

Thus, although such disruptive contributions were rare, the students can be seen to respond to them in ways which were playful, critical or innovative, taking their discussions beyond the expectations and requirement of the classroom, and relating them to their out-of-classroom practices and interests. The discourses of work, family or popular culture meet the discourse of classroom, resulting in productive, meaningful creativity.
Discussion

I have shown how certain types of knowledge contributed by the students appeared to offer less transformative potential than others, and only a small proportion of the students’ knowledge contributions seemed to take their discussions beyond the constraints of the curriculum. Other, more prevalent, types of contribution, while valuable in scaffolding formal learning within the classroom, were less relevant and useful outside the classroom.

At this point it becomes useful to apply the concept of habitus as an interrogative tool, and in particular its use by Reay (1995; 2004) and Barton et al (2007) who suggest that habitus can limit or open up an individual’s perceptions of the possibilities of thought, discourse and action available to them in the classroom. However, discourse and habitus can be seen to be mutually structured and structuring; thus discourse may also serve either to reinforce or to disrupt that habitus.

The examples of conformative contributions listed in Table 1 above were clearly useful to the students in the recontextualised world of mathematical learning, helping them to successfully fulfil classroom expectations, and to deliver the required performance during the assessment and accreditation process. They thus could be regarded as having ‘exchange-value’, as they can be used to gain qualifications which lead to cultural capital (Bourdieu 1986) and employment opportunities. It is also worth noting that the participating students clearly enjoyed their classes and expressed great satisfaction at their own progress. Nonetheless, I would argue that conformative knowledge contributions are only arbitrarily valuable; they have been given value only in response externally-imposed ideologies regarding what should constitute adult numeracy learning.

Conformative knowledge contributions seemed to restrict, rather than widen, the students’ perceptions of the possible, so that, for example, the idea of questioning the contexts of word problems becomes perceived as aberrant; and curriculum and accreditation requirements are accepted as inevitable and non-negotiable. Conformative contributions thus tended to narrow the students’ perceptions of discursive possibilities, and encouraged them to think within the constraints of the curriculum and accreditation. As stated above, they were much more prevalent than disruptive contributions throughout the data I collected, and seemed to be privileged – by the students, although not necessarily by the teacher – as more valid.
Types of knowledge contributions which I have conversely categorised as disruptive were generally based on out-of-classroom practices and interests. These contributions served to disrupt schooled habitus by broadening the possibilities of thought and action which the students perceived to be open to them in the classroom, and allowing them to think outside the constraints of curriculum requirements. I have termed these knowledge contributions as ‘disruptive’, not because they disrupted the self-imposed order of the adult classroom, but because they disrupted and challenged the regulative discourse of the Skills for Life curriculum and accreditation requirements. Nor do I mean to imply that the students offered disruptive knowledge contributions as a conscious act of transgression; rather it is the knowledge contribution itself which disrupts curricular discourse.

Taking talk as a transient trace of students’ practices and habitus, it is helpful to consider the students’ privileging of conformative knowledge contributions in terms of the inter-relationship between their past experiences of schooling and present numeracy classroom practices. Previous studies have found that the attitudes of adult numeracy learners towards mathematical learning are heavily influenced by their perceptions of their own prior lack of success in school mathematics. For example, Swain (2005, p. 312) found that adult numeracy students were not motivated by their need to use mathematics in their everyday lives, but by their wish to do well in a subject in which success had previously eluded them: ‘Rather than avoid school maths, they wanted to do school maths again, but this time succeed in it.’ Coben (2000) notes the tendency of adult numeracy learners to dismiss the mathematics they can do as ‘just common sense’, and not to value it as highly as the mathematics they cannot do. Similarly, an understanding of the expectations of word problems was one of the most prevalent types of conformative knowledge contribution in the classrooms I studied, and this has been theorised in terms of the habitus associated with children’ schooling, for example by Cooper and Dunne (1998).

Bourdieu and Wacquant (1992) argue that for many adults, experience later in life will only serve to reinforce such habitus. Conformative beliefs and values may enter the classroom, as Ivanič and Tseng (2005) suggest, through the discourses of curriculum and accreditation materials. They may also be reinforced, however unintentionally, by the teacher. Current funding arrangements put Skills for Life teachers in England under pressure to ensure that all learners achieve qualifications, and teaching too often tends to focus on preparing students for examinations rather than its relevance to out-of-classroom practices (Cara et al, 2008). The teacher participating in my study clearly enjoyed listening to disruptive
knowledge contributions when they occurred, was interested and receptive, and certainly did not try to suppress them. However, she did not explicitly encourage her students to draw on their out-of-classroom numeracy practices.

I suggest that a disposition to favour conformative knowledge contributions can be regarded as part of the students’ schooled habitus, developed either at school or during later classroom learning experiences. However, while habitus is regarded as durable, it is not necessarily permanent, and the students’ learning may be seen as a transformation of habitus. The students’ disruptive knowledge contributions offer the possibility of mutually constitutive interactions between habitus and field, in which the usual constraints of classroom expectations are disrupted to offer a wider range of possibilities of thought, discourse and action.

**Implications for Practice**

Although conformative knowledge contributions are undoubtedly useful in scaffolding students’ learning for short-term goals such as gaining qualifications, disruptive knowledge contributions promote critical awareness, broaden students’ perceptions of the possibilities open to them and make learning more meaningful, enjoyable and relevant. I suggest that teachers need actively to create and promote opportunities for both conformative and disruptive knowledge contributions to be legitimated and celebrated.

The following suggestions for practice are made tentatively because, as explained above, only a very few instances were seen. The aims of this study were naturalistic and ethnographic, rather than transformative; to find out whether the participating students already drew on their out-of-classroom numeracy practices, rather than to identify and evaluate classroom activities which encouraged them to do so.

One notable pattern did emerge strongly; that no disruptive contributions occurred while the students were working on traditional, context-based word problems. This genre of mathematical classroom activity, with its arbitrary, over-simplified scenarios and single ‘right’ answer, seems to be strongly associated with a particular set of expectations, practices and discourses to which the students conformed (e.g. Cooper and Harries, 2002; Gerofsky, 1996; 2010; Mukhopadhyay and Greer, 2001; Oughton 2011). They did not discuss or critique the contexts in which the problems were set, even if these were
unrealistic, and instead focussed on obtaining an answer which matched that provided on the answer sheet.

By contrast, those rare occasions on which disruptive contributions did occur, tended to be associated with episodes of classroom activity in which constructivist pedagogies were allowed to dominate. Activities which were less structured and more discursive; which involved materials other than worksheets; which were open-ended, had more than one right answer, or to which the answer was not already known by the teacher; were more effective in encouraging students to discuss, critique, challenge and question curricular expectations through disruptive knowledge contributions. Our understanding of classroom activities which encourage students to relate their learning to out-of-classroom practices might usefully be furthered through teacher-led action research in this area.

**Concluding Comments**

This study was originally inspired by the ‘funds of knowledge’ approaches advocated by Moll et al (1992), and its initial aim was to investigate whether collaborative groupwork offered greater affordances for learners to contribute and share their informal knowledge and numeracy practices than more traditional forms of classroom activity. However, analysis of the students’ discourse showed that they rarely made this type of contribution even when given opportunities to do so, and that they appeared to value conformative knowledge contributions more highly. Thus the focus of the analysis shifted towards investigating and attempting to theorise the students’ disposition to privilege conformative knowledge contributions. I have found the concept of habitus, and specifically schooled habitus, a useful analytical tool in this process, though other theoretical framings are possible.

In summary, my analysis of classroom interaction shows how the knowledge contributions shared by the participating students could be categorised into those which disrupted the regulatory discourse of the curriculum and accreditation requirements, and those which conformed to it. Disruptive knowledge contributions tended to broaden the possibilities of thought and discourse which students perceived to be open to them, and encouraged them to relate their learning to out-of-classroom practices. However, students appeared to privilege conformative knowledge contributions, and these contributions were far more prevalent throughout the recorded data. I have argued that such discourse is both constituted by, and constitutive of, the students’ schooled habitus, and that this habitus
may be durable, with a hysteresis effect which makes it hard to undo earlier influences. Thus the schooled habitus is likely to persist even when students enter the new field of the adult numeracy classroom. Moreover, the prevalence of conformative knowledge contributions in the classroom, further legitimated by the regulative discourse of curriculum and accreditation, can serve only to reinforce schooled habitus in a mutually constitutive cycle.

Nonetheless, habitus is durable, but it is not permanent, and certain classroom activities did seem to foster disruptive knowledge contributions, to offer more potential to transform habitus and to overcome the usual constraints of classroom discourse. Such instances, however, were very rare, and while Skills for Life classrooms remain focussed on adherence to a nationally prescribed curriculum, and on the achievement of qualifications assessed through word-problems, it seems likely that conformative knowledge contributions will continue to be more highly-valued than disruptive knowledge contributions by students and teachers alike.

Notes
1. The term ‘Skills for Life’ has been widely adopted by providers in England as a convenient label for the adult numeracy, literacy and language subject area. Nonetheless, it was originally a policy brand name; and, as such, is often rejected by authors writing more critically of the sector. In this article, however, I use this term deliberately and specifically to encompass the set of discourses which currently dominate the construction of activity and social relationships in such classrooms.
2. The Office for Standards in Education, the regulatory body for maintaining standards in educational provision in England.
3. Level 2 is the target level for 16-year-olds completing compulsory schooling in England.
4. Names of all participants are pseudonyms.

Transcription Conventions
Transcription conventions have been kept to a minimum. Those used in the extracts reproduced in this article are:

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<th>Convention</th>
<th>Meaning</th>
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<td>[description of gesture]</td>
<td>Gesture, action or other non-verbal semiosis</td>
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<td>(.)</td>
<td>Pause</td>
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<td>?</td>
<td>End of apparently interrogative utterance (rising intonation)</td>
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<td>.</td>
<td>End of utterance (falling intonation)</td>
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<td>–</td>
<td>Interrupted or broken-off utterance</td>
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<td>emphasised word</td>
<td>Stress placed on underlined word by speaker</td>
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<td>(guessed utterance)</td>
<td>Indistinct utterance; content of brackets represents ‘best guess’</td>
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<td>(...)</td>
<td>Untranscribable utterance; unable to make guess (usually due to overlapping talk from other speakers)</td>
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<td>...</td>
<td>Lines transcribed in full transcript but not reproduced in extract for clarity or concision (usually overlapping talk from other speakers)</td>
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</tbody>
</table>
References


Bourdieu, P. (1975) ‘The specificity of the scientific field and the social conditions of the progress of reason’, *Social Science Information* 1975(14) pp. 19-47


BSA (2001b) *The Adult Literacy Core Curriculum*, London: Basic Skills Agency


Helen Oughton

Conformative and disruptive contributions in Skills for Life classrooms


Ofsted (2011) Tackling the challenge of low numeracy skills in young people and adults. Manchester: The Office for Standards in Education, Children’s Services and Skills


### Appendix

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<th>Measuring spoon</th>
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Figure 1. Cards used for categorising measuring instruments activity (DfES, 2007)