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‘Straitjacket’ or ‘springboard for sustainable learning’? The implications of formative assessment practices in vocational learning cultures

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In contrast to theoretical and empirical insights from research into formative assessment in compulsory schooling, understanding the relationship between formative assessment, motivation and learning in vocational education has been a topic neglected by researchers. The Improving Formative Assessment project (IFA) addresses this gap, using a sociocultural approach to explore the relationship between formative assessment practices and ‘learning cultures’ in vocational education. This article explores the influence of learning cultures in vocational education on the practice of formative assessment and evaluates critically two closely related questions. Why do some learning cultures foster formative assessment that leads to instrumental learning while others develop deeper forms of learning? When is formative assessment a springboard for sustainable learning, and when does it remain an instrumental straitjacket?

Keywords: formative assessment; instrumental learning; learning cultures; sustainable learning; vocational education

Introduction

Ideas from educational research often struggle to be taken seriously by policy-makers and practitioners. However, the findings of the King’s Medway Oxfordshire Formative Assessment Project (KMOFAP) and the principles of the Assessment Reform Group (ARG) have affected formative assessment practices in certain secondary school subject areas. A key aim in research and development work has been to integrate a holistic view of formative assessment with pedagogy that develops students’ cognitive abilities within clearly defined subject domains (Black and Wiliam 1998; ARG 2002; Black et al. 2003).

The same cannot be said for links between research and practice in the post-compulsory sector, where policy and practice in formative assessment over the past 20 years have been driven much more by concerns about motivation, engagement and inclusion than interest in improving cognition within specific subjects (see Ecclestone 2007). Claims that formative assessment raises achievement and engages students with learning have not been explored critically in post-compulsory education. The project Improving Formative Assessment in Vocational Education and Adult Literacy, Language and Numeracy (IFA), on which this article is based, aims to address this gap.

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There is currently no watertight definition of formative assessment. For Black, all feedback is synonymous with formative assessment and feedback can take many forms. He argues that essential feedback comes from peer assessment and self-assessment, in new approaches to discussion work and to teachers' written feedback, and in carefully constructed, open-ended classroom questioning (Black 2007). A pedagogic approach to formative assessment comes from its depiction as 'encompassing all those activities undertaken by teachers and/or by their students which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged' (Black and Wiliam 1998, 7). From this perspective, assessment cannot be understood as formative unless evidence from feedback is actually used to adapt teaching and learning activities (see also Sadler 1989).

Although these ideas are well understood and widely used by researchers and many teacher educators and staff developers, they do not offset widespread misunderstanding among practitioners and institution managers in post-compulsory education that some activities are 'formative' and others 'summative'. There is a tendency to see formative assessment as teacher-led techniques for feedback, diagnosis and review where, despite an accompanying rhetoric of 'engaging students with learning', the techniques and associated formal paperwork are often solely to 'track' students towards their summative targets (see Ecclestone 2002; Torrance et al. 2005). Formative assessment is widely seen as synonymous with continuous or modular assessment where summative tasks are broken up into interim ones. However, Black et al.'s more holistic definition of formative assessment (2003) highlights the complexity of helping teachers change their practice because the dominance of summative targets leads them to associate activities such as classroom questioning, oral and written feedback, self-assessment and peer assessment around practice examination questions with 'teaching' rather than with a view of assessment for diagnosis of problems, useful and meaningful feedback and for informing teaching activities.

Such confusion suggests that practitioners need more insights about how formative assessment practices can help to develop deeper learning, or what Boud calls 'sustainable' learning (Boud and Falchikov 2007). Sustainable formative assessment not only requires that students are involved in feedback, diagnosis and review but also that teachers adapt activities in order for students to improve their skills, knowledge and understanding and to compare their current performance with their past performance (ipsative, or self-referenced assessment).

The need for clarity about formative assessment within specific subject domains and learning contexts is confirmed by research which shows that the same assessment activities or methods can lead to very different kinds of learning in different settings. In the Learning How to Learn project in the Economic and Social Science Research Council's Teaching and Learning Research Programme (TLRP), Marshall and Drummond use the evocative terms 'spirit' and 'letter' of formative assessment or 'assessment for learning' (AfL) to capture how it was practised in the classroom:

The 'spirit' of AfL ... we have characterised as 'high organisation based on ideas', where the underpinning principle is promoting pupil autonomy. ... This contrasts with those lessons where only the procedures, or 'letter' of AfL seem in place. We use these headings – the 'spirit' and 'letter' – to describe the types of lessons we watched, because they have a colloquial resonance which captures the essence of the differences we observed. In common usage adhering to the spirit implies an underlying principle which does not allow a simple application of rigid technique. In contrast, sticking to the letter of a particular rule is likely to lose the underlying spirit it was intended to embody. (Marshall and Drummond 2006, 137)

They found that teachers working in the spirit of AfL encouraged students to become more independent, critical learners while those working in the letter of AfL adopted teacher-centred formative techniques in order to transmit knowledge and skills. However, as with all categories, these are not neatly separated from each other; teachers in this project often had a particular goal and focus of attention in mind, but shifted between these and others during a lesson (Marshall and Drummond 2006). Researchers and teachers in the IFA project have found the concepts of ‘letter’ and ‘spirit’ helpful in characterising formative assessment practices. We connect them in this article to instrumental and sustainable formative assessment, defined respectively as formative assessment that is a mechanistic means to a summative end (such as coaching to the detail of the criteria), and assessment that requires students to develop both subject knowledge and insights into the learning process through deep engagement with feedback, questioning and so forth.

In the light of these arguments, this article addresses two closely related questions:

- Why do some learning cultures foster formative assessment that leads to instrumental learning while others foster formative assessment designed for sustainable learning?
- When is the letter of formative assessment a springboard for the spirit of it, and therefore for sustainable learning, and when does it remain a straitjacket and therefore instrumental?

The article summarises the Improving Formative Assessment (IFA) project and then explores how we use the concept of ‘learning culture’ to analyse the qualitative data. The main body of the article focuses on formative assessment practices in two different vocational courses, from which we draw some provisional conclusions in response to our initial questions.

The IFA project

Funded by the Nuffield Foundation, the National Research Development Centre for Adult Literacy and Numeracy (NRDC) and the Quality Improvement Agency, this three-year project (2004–2007) is a partnership between Oxford Brookes University, the University of Exeter, the NRDC, the Learning and Skills Network and the National Institute for Adult and Continuing Education (NIACE). The main aim is to highlight factors that help and hinder change to formative assessment practices, and the ways in which different learning cultures affect different practices.

Our research sites encompassed Level 3 and Level 2 vocational education courses in one school and three further education (FE) colleges, Entry to Employment programmes in three colleges, and six adult literacy, language and numeracy programmes in colleges and local authority adult education centres. Data collection over two years (2005/6 and 2006/7) involved different institutions in each of these years: one further education college, one comprehensive school and two adult education sites in 2005/6 and two further education colleges and four adult education sites in 2006/7.

Fieldwork involved three individual interviews with selected (focal) teachers and two students from each of their groups, supplemented by an initial and an exit questionnaire to all teachers in the subject/programme team and to all students in their groups. The project used a problem-based approach to professional development, rather than providing teachers with ‘recipes’ for formative assessment (see Andrews et al. 2007). Through three

structured workshops, teachers in subject teams identified a formative assessment strategy to address a specific problem in their particular context, implemented it over six months and evaluated its effects on students' learning and motivation. The workshops and interviews took place each term, with the second interviews of teachers and students following classroom observations in which the new formative assessment strategies were being used.

This article is concerned with two vocational education courses at Moorview Community College: a large (more than 2000 students), over-subscribed comprehensive school in a small town, awarded 'outstanding' by Ofsted and highly regarded in the locality. Our research focused on the second-year Level 3 AVCE Science (Advanced Vocational Certificate of Education, a 'Vocational A level') and the Level 2 GCSE Applied Business courses.

Learning culture

Analysis illuminates the ways in which teachers conceptualise and practise formative assessment. The concept of 'learning culture' enables us to analyse how practices in some contexts rooted in the spirit of formative assessment help to foster students' deep engagement with learning while, in other contexts, practices in the letter of it encourage their instrumental compliance with assessment targets. The concept was developed in the Transforming Learning Cultures in Further Education (TLC) project which drew on the well-known work of Bourdieu to define it as:

a particular way to understand a learning site¹ as a practice constituted by the actions, dispositions and interpretations of the participants. This is not a one-way process. Cultures are (re)produced by individuals, just as much as individuals are (re)produced by cultures, though individuals are differently positioned with regard to shaping and changing a culture – in other words, differences in power are always at issue too. Cultures, then, are both structured and structuring, and individuals' actions are neither totally determined by the confines of a learning culture, nor are they totally free. (James and Biesta 2007, 18)

A learning culture is not the same as a course or programme; rather, it is a particular way of understanding any course/programme by emphasising the significance of the interactions and practices that take place within and through it. These interactions and practices are part of a dynamic, iterative process in which participants (and environments) shape cultures at the same time as cultures shape participants and environments. Learning cultures are therefore relational, encompassing participants such as parents, college managers at various levels, policy-makers and national awarding bodies. Yet 'learning culture' is not synonymous with 'learning environment', since the environment is only part of the learning culture:

a learning culture should not be understood as the context or environment within which learning takes place. Rather, 'learning culture' stands for *the social practices through which people learn*. A cultural understanding of learning implies, in other words, that learning is not simply occurring *in* a cultural context, but is itself to be understood *as* a cultural practice. (James and Biesta 2007, 18, original emphases)

Rather, the TLC project shows that learning cultures are characterised by the interactions between a number of dimensions:

- The positions, dispositions and actions of the students.
- The positions, dispositions and actions of the tutors.

- The location and resources of the learning site which are not neutral, but enable some approaches and attitudes, and constrain or prevent others.
- The syllabus or course specification, the assessment and qualification specifications.
- The time tutors and students spend together, their interrelationships, and the range of other learning sites students are engaged with.
- The intended and unintended effects of college management procedures, together with funding and inspection body procedures and regulations, and government policy.
- Wider vocational and academic cultures, of which any learning site is part.
- Wider social and cultural values and practices, for example around issues of social class, gender and ethnicity, the nature of employment opportunities, social and family life, and the perceived status of FE as a sector. (Hodkinson et al. 2007)

A cultural understanding illuminates the extent to which participants act upon the learning and assessment opportunities they encounter and the assessment systems in which they participate. Of crucial importance is the fact that teachers, students, institutional managers, inspectors and awarding bodies all have implicit and explicit values and beliefs about the purposes of a course or qualification, together with certain expectations of students' abilities and motivation. Such expectations can be explicit and implicit, realistic or inaccurate. They can, for example, be based on stereotypes or assumptions about what 'types' of students are suitable for particular courses and particular forms of assessment (see Ecclestone 2007). Other influential factors that make students active in shaping expectations and practices are the nature of relationships with other students and teachers, their lives outside college and the resources available to them during the course (such as class contact time) (see, for example, Bloomer and Hodkinson 2000; Ecclestone 2002; Bathmaker 2005; Torrance et al. 2005).

The following sections of the article focus on the learning cultures of AVCE Science and GCSE Applied Business at Moorview Community College. Drawing on analytical frameworks used in the TLC project, we explore the level of 'synergy' and 'expansiveness' in each learning culture and their relationship to the kind of formative assessment practised in each. 'Expansiveness' refers to the factors that enable students to maximise their engagement with the subject being studied, and develop positive communication in the class as well as enhancing their own learning processes, rather than merely meeting targets. Discussion of synergy includes factors such as how far students' and teachers' expectations about motivation, 'ability' and the purposes of learning and assessment on the course converge or diverge. The level of expansiveness refers to the point of 'balance' of the learning culture on an expansiveness/restrictiveness continuum. However, expansiveness does not automatically imply good, and restrictiveness less good, practice. Instead, the relevant question is how appropriate the practices on this continuum are for the students (see Hodkinson et al. 2007). There may be times, for example, when an initially more restrictive learning culture may help students to feel secure and confident, and this could then act as a springboard to more expansive learning.

It is important to note that the institutional ethos of Moorview Community College was a key contextual factor in the learning culture of both courses. Its corporate, successful, energetic ethos encouraged high expectations of academic and other achievements, a message which was expressed in the laminated notice displayed in every classroom: 'Opportunity, Achievement, Endeavour, Excellence'. Such an ethos led to a pervasive focus on targets and examination grades, yet the school also emphasised wider educational achievements, for example in the fields of sport and the arts. Another key

contextual factor was the ‘vocational’ nature of each course, and its status on the ‘vocational/academic’ spectrum within the school, a factor to which we will return at the end of the article.

AVCE Science

The learning culture

For his IFA formative assessment strategy, our focal teacher, Derek Armstrong, chose to find new ways to engage students with what the grade criteria for coursework really meant in terms of quality, while helping students become more independent in assessing their own work, through making more detailed use of an explanatory grid for the grade criteria. The other two AVCE Science teachers involved in the project (Jane Wilkins and Emma Scott) chose to find new ways to engage students with examination questions.

The student group comprised sixteen Year 13 students aged 17/18, with roughly equal numbers of boys and girls, and three teachers (teaching the physics, chemistry and biology elements of the course, respectively). The learning culture was marked by a high level of synergy and expansiveness, of which teachers’ formative assessment practices were a part. Teachers regarded formative assessment as integral to ‘good’ learning, ‘part of what we do’ rather than separate practices, where formative assessment was a subtle combination of helping students to gain realistic grades, alongside developing their enthusiasm for and knowledge of scientific principles and issues, and their skills of self-assessment. It encouraged students to become more independent and self-critical learners. Strong cohesion between teachers’ expectations, attitudes to their subject and aspirations for their students was highly significant in the way they practised formative assessment.

Derek espoused a theory of learning that encouraged him and his students to construct their knowledge and understanding together, by working actively to understand mistakes, learn from them and build new insights. Classroom observations and student interviews revealed that this espoused theory was also his theory-in-use (Argyris and Schon 1971). He routinely asked students to explain a point to the rest of the group, rather than always doing this himself. Although students did not conceptualise their learning in exactly the same way, and placed a higher premium on their grades, they also showed appreciation of the way their understanding and appreciation of science was developing:

Some of the teachers teach you the subject and some of the teachers just help you learn it. Mr Armstrong will help you learn it and understand it. (Nick, AVCE student, first interview)

‘Synergy’ also stemmed from close convergence between teachers and students regarding both expectations and dispositions to learning. The AVCE teachers expected students to achieve, while accepting that they did not usually arrive on the course with such high GCSE grades as those taking separate A level science subjects. There was also a general consensus between teachers and students that science was intrinsically interesting as well as practically relevant. The teachers were confident and enthusiastic about their subject areas, teaching subjects that were part of the accepted academic canon translated into a vocational syllabus.

Most students saw the course as a positive choice, although for some it was a second choice when they failed to achieve high enough grades to take a single-subject science A level. However, once on the course, there was a high level of enthusiasm and commitment and a desire to study science, rather than because of any ‘vocational relevance’. Most did not initially aim for higher education (HE) but soon became motivated to apply to study in

a vocational branch of science (such as forensic science), or a different field (such as architectural technology) where the vocational A level grades would help them achieve the necessary points score. Their relationship with the course enabled some to broaden their 'horizons for action' considerably during Year 13 (i.e. 'the arena within which actions can be taken and decisions made' – Hodgkinson and Sparkes 1997).

There was, therefore, an influential ethos among students and teachers of progression in a clear route to something desirable and interesting. This reinforced the strong subject culture, applied approvingly by teachers and students to real vocational and life contexts. Although grades were crucial, formative assessment was far from being predominantly grade focused, despite the strong institutional ethos.

The beliefs and commitments of Derek Armstrong were very powerful factors in this learning culture. He insisted that he would not simply 'teach to the test', emphasising constantly, instead, the importance of developing students' understanding of the value of scientific knowledge, and their ability to become more independent learners, as an essential preparation for university. He believed strongly that an advantage of the vocational over the academic A level was that it taught students to be 'in charge of their own learning' (first interview). This involved his belief that students should acquire self-knowledge in order to be able to learn effectively, including knowing when to ask for help: 'I think students must know how good they are, and know what their limitations are' (first interview). His teaching and assessment practice encouraged dispositions that could lead to deeper learning, rather than simply success in meeting targets:

I'm a lot more comfortable with saying, 'You're actually getting a grade that is much more appropriate to what you've done, rather than one which we could have forced you to get, by making you do exactly what we know needs to be done', which obviously we know happens more and more in education because it's all results driven. (Derek, second interview)

Indeed, he was not prepared to compromise to meet a target-driven educational culture:

There's no point in jumping through hoops for the sake of jumping through hoops and there's no point in getting grades for the sake of getting grades. I know that's not the answer, because the answer is – no, we should be getting them to get grades. But that's never as I've seen it and it never will be. (Derek, third interview)

Despite its collaborative nature, this learning culture was rooted in a strong belief on both sides that the teacher is the most crucial factor in learning: 'I believe they all know they can't do it without me' (Derek, third interview). When asked what motivated his students on the AVCE, Derek's answer was unequivocal: 'I'm going to put me, me, me, me' (first interview). Drawing on Prenzel's typology of motivation, our study showed that expectations of positive achievement for all students interacted with, and were also shaped by, expectations of students' motivation. Teachers showed high levels of *intrinsic* motivation, where engagement with topics and ideas was rooted in their intrinsic value rather than for *external* reward (such as grades), and also *interested* motivation, where a sense of personal and learning identity is bound up with the subject, its activities and possibilities. They expected students to develop intrinsic and interested motivation too. Students wanted a qualification in order to achieve their individual goals (*external* motivation) but the goals stemmed from interest in the course/science and their sense of 'becoming somebody' in a subject with progression and future possibilities (*intrinsic* and *interested* motivation) (see Ecclestone 2007 for a full discussion of this typology).

Students' motivation appeared to stem from a symbiotic relationship between their teachers' expertise and enthusiasm, the supportive group dynamics, the focus on

collaborative learning, and their own vocational goals. However, it would be naïve to expect deep levels of motivation to remain constant, and motivation fluctuated with individuals and over time. While the learning culture of AVCE Science was characterised by a high level of synergy, it was also reasonably ‘expansive’. Despite the constraints of the syllabus and the assessment criteria, teachers took opportunities to promote an interest in scientific concepts and topics, and Derek encouraged students to develop individual approaches to meet the criteria. Moreover, the vocational relevance of the AVCE contributed towards the expansive nature of the learning culture. Although the course was not highly practical and did not include work placements, it did include relevant trips and experimental work. It was ‘vocational’ above all, though, in the way the teachers related the knowledge they taught to real-life experience. As Derek summed up:

I think the real-life concepts that we try and pull out in everything works very well. I think we’re *incredibly* fortunate to have time to teach *learning*, as opposed to time to teach *content*. (Derek, first interview, original emphases)

Students had generally begun the course expecting the work to be reasonably easy and therefore restrictive and ‘safe’, rather than challenging. In fact, the teachers’ pedagogy and formative assessment enabled students to accept challenge and risk, both in *what* they were learning and in *how* they were learning. Our observations and interviews showed that they found themselves explaining work to their fellow students, joining in Derek’s explanations, negotiating how they might go about tasks and losing any initial inhibitions about asking questions of Derek and of one another.

The relationship between the learning culture and formative assessment

In theory, there was potential for negative tension between Moorview’s target-driven, achievement-orientated ethos and the AVCE Science teachers’ commitment to their subjects, but in practice this did not materialise. Instead, these teachers saw formative assessment as being about how students learned and as part of a continuum of teaching and assessment techniques deeply embedded in their day-to-day practice. Derek used formative assessment to help students construct their knowledge, rather than solely to achieve targets. As he put it, ‘I can teach them to enjoy the science – but I wouldn’t call that formative assessment’ (second workshop). His declaration, ‘My primary concern has never been their final grade’ (third interview) should not, though, be taken to imply a cavalier attitude towards helping students to gain reasonable grades. All his students achieved high enough grades in the AVCE to gain their choice of university place.

Students’ willingness to admit to misunderstandings or half-understandings, and for teachers to diagnose these, is crucial to effective formative assessment (Black 2007). The AVCE learning culture encouraged students to become involved in peer assessment and self-assessment in different ways, and to view a problem as an interesting question or something to be explored with one another and with Derek, rather than as an indicator of their lack of ability. High levels of synergy and expansiveness were reflected in Derek’s formative assessment practices, which he saw simply as part of teaching and learning, for, as he put it, ‘I know no jargon’ (first interview).

Critical and positive feedback were also integral to his teaching:

I don’t think there is any point in scribbling on a piece of paper, ‘This isn’t done right. This is how it should be done.’ I think you’ve actually got to go through and do it *with* them. They’ve got to know where the issues and the problems are for themselves. (Derek, first interview)

In other learning cultures, his strategy for the IFA project might have been a technique used in the letter of formative assessment. However, Derek refused to give students a 'check list' to use with the criteria 'because that's not preparing, that's not what the course is about, and they should be working more independently' (second interview). Instead, he used the technique in the spirit of formative assessment, to develop students' deeper understanding both of the coursework subject matter and of their own ability to be self-critical of their assignment. He wanted to encourage them, for them to realise, 'Well, it's not actually as difficult as you think it is' (second interview).

GCSE Applied Business

The learning culture

The two Applied Business teachers in the IFA project chose to help students improve their coursework grades; this involved an exercise where they used the assessment criteria to mark exemplars of high quality work. This approach, while similar in intention to the one used by Derek, was enacted within, and shaped by, a very different learning culture. There were three 'mixed-ability' groups of boys and girls taking Applied Business: Groups 1 and 2 (with 21 and 23 students respectively) were taught by Laura Newton and Group 3 (with 20 students) by William Marwood. The students were all aged 15–16 in this second year of their course and, as with the AVCE students, their dispositions to learning were shaped in part by their age and level of maturity. The learning culture was characterised by a low level of synergy regarding teacher and student expectations of learning and achievement but a high level of synergy in relation to grade dependency. There were differences between the different groups (most markedly between Groups 1 and 2 and Group 3) but, overall, the learning culture of all groups was dominated by grade dependency.

The level of expansiveness was also low and a key factor was that applied business was not a 'subject' that students and teachers could get hold of. While science enjoys a well-respected, firm subject base rooted in an academic tradition, applied business has a nebulous subject base that is not well recognised outside its various specialisms, although it has potentially strong life and work applications. The AVCE Science students had learnt science from Year 7, and built up a conceptual framework over time, whereas applied business was a new subject at age 14. It was, moreover, a new 'vocational' subject, the meaning and status of which carried mixed messages and interpretations. For example, many vocational students and teachers equate 'vocational' with 'practical' activities as opposed to didactic teaching or written work, and the application of topics to work-related or life-related contexts (see Davies and Tedder 2003; Davies and Biesta 2007; see also Torrance et al. 2005).

There seemed to be several reasons for the lack of synergy in this learning culture. First, teachers' and students' initial expectations did not seem to coalesce to any great extent. The interviewed students had chosen the course because they wanted to avoid too many exams, but also because they thought it would be 'useful' in a non-specific way or that they thought they might like to 'work in business' one day. For some in the whole group it had been a positive choice, for others a last resort. In contrast, the two teachers' expectations of what students wanted to gain were wider: a broad picture of the world of business and its relevance to everyday life. Despite their best intentions of conveying this, the teachers became increasingly grade focused, like their students, where 'teaching to the test' came to dominate in a culture steeped in the counting of marks.

Second, there was little collaborative or interactive learning (at least during this second year of the course), and students regretted this. The Moorview message was that

collaboration was not part of GCSE learning and, in order to discourage plagiarism from the internet, students were subject to stern warnings about work being 'their own'. This resulted in students spending much time working individually at computers, with little peer learning and virtually no didactic teaching. The learning culture was dominated by coursework requirements which, in the students' eyes, did not necessarily equate to learning. As one of the students explained:

I did find it more interesting when we were learning as a class. . . . I just felt like I was learning more then instead of sort of teaching myself as we were going along. (James, Group 3, third interview)

Third, a positive expectation of achievement and engagement did not exist between teachers and between teachers and students. This was evident in frequent references to students' 'ability' by Laura and William. Both referred to 'able' and 'weak' students, but while Laura also used the terminology of achievement ('lower' and 'higher' achievers), William's language revealed more fixed views of students' abilities and the ways students learned, referring, for example, to some students as 'your spoon-feed people' (third interview), and to the simplest version of the criteria as 'an "idiot sheet" . . . where . . . the lower ability students can just meet the basic standards' (third interview).

Approaches to teaching and learning did not lead to such cohesive groups as in AVCE Science, although Groups 1 and 2 were more cohesive than Group 3; much of the lack of synergy in this respect seemed to stem from the presence of distinct sub-groups within each class. Unlike the AVCE Science group, each of the three Applied Business groups contained some students who were clearly *amotivated* (namely, they had no motivation at all, not even through *external* sanctions or rewards: see Ecclestone 2007). The presence of amotivated and/or disruptive students was most obvious in Group 3, as was that of the higher achieving sub-group. The physical layout of the teaching rooms contributed towards lack of cohesion, especially William's room which was partially divided into computer booths, into which the less committed students retreated. This removed them physically, socially and cognitively from the main interaction between teacher and students. The higher achieving interviewees disliked having to be in a class with those who were unmotivated, comparing Applied Business unfavourably with the 'tiered' groups of their other GCSE subjects. As James said, 'I would have preferred it if I had been with . . . people that had chosen it because they wanted to, not because it was what they fell back on' (James, Group 3, first interview).

With learning firmly equated with grade achievement, it is unsurprising that motivation was seen as driven largely by points and grades with a learning culture marked by *external* and possibly also *introjected* motivation (where students are motivated by their ability to internalise and use an external support structure such as the detail of the assessment specifications and criteria or a system for coaching to the criteria), rather than by *intrinsic* or *interested* motivation (see Ecclestone 2007). 'I think, overall, the main thing that most motivated people was the grade' (Laura, third interview). Laura used target grades to motivate, and always related her feedback to a grade result:

If they didn't know what mark the work they had done was worth, then it wouldn't be as motivational. . . . They're only interested in what they can do to improve once they know the grade isn't as good as they would want it to be, or they only need a few marks to get into the next grade boundary. (Laura, third interview)

However, this instrumental approach should not be viewed as merely negative. Laura cited examples of a positive effect on their peers when students increased their grades as the

course progressed. Melanie's comment was typical of the higher achieving students: 'I've pushed myself more because I've been achieving good grades' (Melanie, Group 2, third interview).

In this particular learning culture, instrumentalism and the letter of formative assessment were entirely rational, pragmatic responses. The grade synergy seemed to emerge from a weak vocational subject, leading to less potential for an enthusiastic subject focus from the teacher, and assumptions that students' motivation was mainly instrumentally and externally driven. An institutional ethos of achievement combined with these factors to lead teachers and most students to agree on grade achievement as the sole acceptable goal. It was the means to an end for higher achieving students, most often in the sense of a step towards A levels and possibly HE rather than towards a business-orientated career. It was part of doing well at school, in order to increase life chances on leaving. However, this was not the case for the lower achieving students. From our observations of the grading activity and general classroom activities, it seems that the grade-dependent culture had a negative impact on such students, contributing towards their disruptive behaviour in class and lack of willingness to engage with the tasks.

This learning culture was also largely restrictive. For the age and maturity of students in an applied course heavily dependent on precise criteria for coursework, this might be seen as both unsurprising and appropriate. A fairly constrained approach could help students to feel confident with this 'new' subject, able to achieve well in the coursework units because they were clear about what they had to do. In this context, instrumentalism could have, potentially, led to deeper learning, once a safe base had been established. In practice this did not happen. Instead, restrictiveness led students to show little appreciation of the wider issues relating to the world of business. Despite hints of a desire to broaden students' knowledge outside the coursework criteria, summative assessment dominated and theories of learning were predominantly functional:

Fairly soon – they get wise ... 'cos I keep telling them the important thing is getting this coursework right – [and] you can't get them to do anything in the classroom, unless they can see the actual benefit. (William, first interview)

Certainly with the Applied ... you know, we teach straight to the scheme, so it is nice every now and again, if something's in the news we can extend it a little bit ... but at the same time, *always* emphasise, you know, 'It's nice to know this, but you're not actually going to be tested on it.' ... So we try and tailor *everything* to them completing the coursework because, basically, I don't want to waste their time. (William, third interview, original emphases)

There seemed to be potential to expand learning opportunities, for example by building on students' work experience and part-time jobs, both outside the course itself. Indeed, expansiveness only seemed to arise outside the parameters of the course, namely through the regional business enterprise competition for schools that Laura had encouraged her students to enter. Jim (Group 2) spoke enthusiastically about the company he had set up which became the Moorview winner going forward to the final. This was the one example in our study of intrinsic motivation, encouraged by the teacher's enthusiasm. The teachers gave two examples of making the course more expansive for past students, by relating it directly to individuals' lives outside school. Both teachers, however, regretted that they could not do this regularly for all students because of time constraints.

Learning was conceptualised by both teachers as primarily about attaining objectives rather than constructing knowledge (Hargreaves 2005). Students saw knowledge as largely separate 'chunks' 'delivered' to them. One student's words epitomised this modularisation of knowledge and thereby of learning: 'You can take more time to like let it set in, before

you have to move on to the next unit and *get some more chucked in*' (Sarah, Group 3, first interview, emphasis added).

Nevertheless, despite the grade-led, attainment-focused language and images of knowledge, classroom observations showed some teacher attempts to elicit deeper engagement from students through questions to encourage more self-criticism of their written work.

The relationship between the learning culture and formative assessment

In summary, the learning culture in all three groups, but most obviously in Group 3, was primarily instrumental and restrictive where students rapidly learned that formative assessment was a direct route to, and motivator for, summative assessment. Laura and William equated formative assessment predominantly with oral and written feedback to help students improve their coursework marks through redrafting. The visible form was the 'cover sheet' that provided an individual progress record for each coursework unit and an accompanying language among teachers of 'targets', 'meeting criteria', 'evidence' and 'levels'. This language is also very prevalent in other vocational education courses in the project, but not evident at all in Advanced Vocational Science (see Ecclestone 2008). Formative assessment practices therefore appeared to be more in 'the letter' than 'the spirit' of formative assessment, although each teacher's practice and emphasis varied. Despite Laura's instrumental language, her practice showed her making use of varied formative assessment activities, like peer assessment of short presentations.

While the teachers equated feedback with formative assessment, the students equated feedback with learning. Their comments about feedback (i.e. helping them with their coursework) were very similar to those they made about teaching/learning, in particular about what makes a good teacher and how their teacher helped them. This reinforced particular ideas about what a 'good' teacher was (see also Ecclestone 2002, 2007). For example, the readiness of the teacher to help and to offer the right sort of feedback was epitomised in one student's words: 'All you basically have to do is stick your hand up. She'll come running if you want her' (Jim, Group 2, first interview). Feedback was the vital factor in learning:

Feedback is the main thing ... I don't feel as if I'm learning anything unless I'm having feedback, being given feedback. It doesn't matter whether it's positive or negative, but at least you can sort of steer yourself in the right direction. (James, Group 3, first interview)

Both teachers were critical of the current 'spoon-feeding' culture of secondary education, seeing the prevailing ethos as one where students expected teachers to 'get them through' the course. Learning was seen not as a partnership where student effort was crucial but almost entirely the teacher's responsibility. They both felt very trapped by this culture and although, in the same school, Derek refused to allow 'spoon-feeding', it is perhaps much harder to resist such expectations with younger students in the less clearly defined subject base and lower status of GCSE Applied Business.

In their introduction of their chosen formative assessment strategy for the project both teachers explained why the class was undertaking this activity. Students had to read sample pieces of coursework and, through paired discussion, award marks according to the criteria. With all groups there was initial criticism of the task from some students, but the interviewed students' understanding of their teachers' aims were largely in line with Laura's and William's intentions.

In all groups (although most obviously in Group 3), the strategy evolved into an instrumental marking exercise, where the marking was seen as an end in itself without exploration of *why* students had decided on a particular mark. To their teachers' surprise, students' allocation of marks were highly accurate. However, they equated higher marks largely with quantity, so that improving coursework remained a question of 'adding in more' rather than realising what kind of 'more' was needed. With Laura's less disruptive groups, however, the strategy had more potential for deeper learning, through her specific questions to the group in the second half of the lesson, intended to lead to more independent self-assessment of coursework.

Discussion

The learning cultures of the two courses influenced formative assessment practices, just as those formative assessment practices simultaneously emerged from and reinforced the levels of synergy and expansiveness within the learning cultures. There were major differences between teachers' overall approach to formative assessment, and especially in their use of a strategy within the IFA project. These were not entirely explained by the age and/or maturity of the students and the level of the course. The GCSE Applied Business learning culture neither encouraged nor modelled much intrinsic interest in the topics of 'business', reflecting, in part, confusion in the qualification design and in the teachers' and students' ideas about what 'business' and 'vocational' comprise.

In contrast, the learning culture of AVCE Science was shaped by the qualification design, the subject enthusiasm of the teachers and a clear sense of 'vocational' knowledge, together with a system of selection within the school for options after compulsory schooling finishes at 16 that guaranteed a certain level of achievement and motivation not available for the Applied Business students. These features, and the practices and expectations of teachers and students, combined to produce a much more expansive learning culture, including the way formative assessment was conceptualised and practised.

Our original question asked why some learning cultures foster instrumental while others encourage sustainable forms of formative assessment. It seemed that the high level of synergy and the expansive nature of the learning culture of AVCE Science both encouraged and encompassed practices in the 'spirit' of formative assessment. In contrast, the more restrictive learning culture of GCSE Applied Business encouraged and perpetuated practices that were essentially in the 'letter' of it. From these differences we could describe formative assessment in the latter as a straitjacket on the potential for sustainable learning, whereas formative assessment in the former can be seen as a springboard for it. There is potential for certain practices to become springboards in Applied Business, but our analysis of the learning culture suggests that this would not be easy.

A second question arising from our analysis is: how can individual teachers question and enhance their own professional values and practices in relation to formative assessment in a climate that encourages instrumentalism? A 'paradox of professionalism' seems to be emerging among some teachers of vocational subjects, where professionalism is marked by concern for students' progress and for developing intrinsic interest in a subject, but who work in such an instrumental system that this is threatened. The coexistence of broader professional values and instrumental assessment systems is possible, as our exploration of the learning culture of Moorview AVCE Science shows, yet instrumental values predominate in the very different learning culture of Moorview GCSE Applied Business. This, then, raises a third question: how far is it possible for individual

teachers to shift a spoon-feeding culture and encourage more sustainable learning when the former is so prevalent?

Formative assessment as part of learning cultures in vocational courses is, to some extent, linked to the ways in which managers, practitioners, parents and students perceive such courses. Revealing the differences in learning culture in these two courses has raised the question of how perceptions and expectations of what counts as ‘vocational’ and the kind of status attached to it was a key factor in shaping the learning culture. In AVCE Science, ‘vocational’ stemmed strongly from the way teachers linked scientific knowledge to real-life situations and to careers. In GCSE Applied Business it seemed simply to be synonymous with the greater ratio of coursework to exams. ‘Vocational’ courses were generally accepted by students, their parents and certain teachers as being of ‘lower’ status than the academic single-subject courses at GCSE or A level. As Laura explained, when talking about her students’ planned progression routes and their choice of the ‘academic’ A level Business Studies over the AVCE route:

All the students that are coming back are quite able and I think that they see the Applied A level [i.e. AVCE] as not so good ... I think that it is sold at school as a lower qualification. There’s like three tiers of entry. There’s the BTEC, the Applied and the straight. (Laura, third interview)

Yet once students became part of what Lave and Wenger might term a ‘community of practice’ in AVCE Science, the issue of status became irrelevant to the three teachers and their students, who all praised the AVCE in contrast to single-subject science A levels (Lave and Wenger 1991).

Implications for improving formative assessment in vocational education

We suggest that understanding the learning cultures of particular vocational courses has implications for improving formative assessment practices. It might be assumed that the learning culture of vocational courses in general would be reasonably uniform, marked by an emphasis on the practical (‘hands on’ rather than theory or written work) and the instrumental. However, our comparison illuminates instead that different values and expectations of what vocational education comprises are inherent in the diverse features and practices of a learning culture.

Gaining a deeper understanding of learning cultures therefore emphasises the need to debate the values, the subject and curriculum base, and the professional subject skills desired in vocational education. The authors of two reports for the *Nuffield review of 14–19 education and training* urge us to reappraise the values embedded in both educational language and practice which shape the learning experience of young people, and they warn against the unexamined use of ‘vocational’ as an apparently unproblematic term. They also argue for replacing ‘assessment for accountability’ with approaches to assessment that are genuinely related to learning (Hayward et al. 2005, 2006).

Our findings in the IFA project support this view. However, as we have also shown, the notion of ‘learning’ is itself prone to both instrumental and sustainable meanings, depending on learning cultures. In many courses, learning and achievement have become synonymous, reinforcing formative assessment as coaching for grade achievement and little more (see Torrance et al. 2005). This means that formative assessment has to arise from a commitment to developing cognitive progression within a subject domain if it is to go beyond instrumental learning (see Ecclestone 2008, in press). Enabling teachers to affect aspects of a learning culture within their control, particularly in relation to subject

development, is crucial if they are to make meaningful changes to formative assessment that might challenge the current climate of mark domination.

A crucial question raised by this article and related analyses is how teachers, institutional managers and qualification designers might create learning cultures with sustainable rather than instrumental formative assessment (see Derrick et al., in press). We suggest that greater awareness of the levels of synergy and expansiveness of a learning culture, and of the complex interrelations between its various dimensions, together with formative assessment rooted in sound subject knowledge could counter the current prevalence of instrumentalism in many vocational courses.

Note

1. In the TLC project, the term 'learning site' was used rather than 'course' to denote more than classroom learning. In the IFA project we use the more usual terms 'course' and 'programme'.

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