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ABSTRACT

This report discusses interim results of a 4-year study of curriculum coherence in British secondary schools, part of an initiative on the quality of teaching and learning called Making Your Way through Secondary School: Students' Experiences of Teaching and Learning (1991-1995). Of the three main criteria for judging the quality of curricula--breadth, balance, and coherence--coherence has been neglected by teachers and planners. Curriculum coherence, often confused with curriculum commonality and consistency, should be seen as the degree to which each student perceives connections between the various subjects the student is learning. The study is based on interviews, conducted once per school term, with three groups of secondary school students. The first interviews were conducted when the students were 12 years old and the last interviews will be conducted when the students are 16 years old. The interviews on which the present report is based were conducted when the students were 14 years old. Though student comments occasionally betrayed an awareness of connections within and among school subjects, students generally showed little awareness of coherence within subjects or across the curriculum. The students were acutely aware of when they did not understand what they thought they should be learning, however, and when asked about their sense of connectedness to school subjects, occasionally expressed a feeling of being lost with a whole subject. Various teaching methods, such as field trips and project work, were identified by students as helping them feel connected to their studies. (ME)

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DRAFT

COHERENCE: THE STUDENT PERSPECTIVE

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"How can you govern a country that makes five hundred different cheeses?" asked Charles de Gaulle (cited by Sarason, 1990, p6). Reflecting on de Gaulle's question, one can perhaps understand why successive Secretaries of State for Education, in a long period of conservative rule and failing to appreciate the energy of responsive local provision, have tried to 'tidy things up'. No such simple tactic could deal effectively with the complexity of the existing structures and at the same time achieve the kind of 'educational' coherence that both practitioners and educational philosophers could respect. It may be that some sense of this led to 'coherence' as a criterion for judging the quality of the national curriculum being "quietly dropped" from official documents - as David Hargreaves (1990) shrewdly noted:

One of the best ideas that Her Majesty's Inspectors contributed to the debate was the principle that the curriculum should be broad, balanced and coherent. The Department of Education and Science adopted the notion of breadth and balance, but somehow and for unknown reasons the concept of coherence was quietly dropped.

And Lawton confirms this, stating bluntly: "coherence - no; purpose - yes, but the purpose was mainly political" (1993, p61).

Interestingly, however - as Hargreaves (1990) and Nixon (1991) point out - the concept was picked up again by the National Curriculum Council (in Circular 6, 1989, and in Curriculum Guidance 3, 1990) in relation to their concern for 'whole curriculum' issues. Their proposal was for a net of cross-curricular dimensions, themes and skills which could be laid across the basic curriculum framework. It would require negotiation across departments concerned with the core and foundation subjects and it would therefore secure organisational coherence through coordinated planning; it would enhance the coherence of students' experience of learning through the common sequencing of skills and a common prioritising of content and values. But,

as Nixon said (1991, p187), this cross-curricular net was being stretched on to a frame "which in no way anticipated the later accretion". Its status as a bolt-on strategy - a "happy illogicality" (Nixon, *ibid*) had some negative consequences for practice. (For a preliminary account of schools' responses to the requirement for cross-curricular provision see Rowe and Whitty, 1993.)

We have to remember, of course - as Hargreaves rightly reminds us - that coherence is not something that we have 'lost' as a result of the national curriculum. The curriculum has traditionally lacked coherence for teachers and for students: it has been a collection of subjects, and subject departments have often been a collection of individuals. Hargreaves ends his article by saying that while the good news for teachers is that the arrival of the national curriculum could be "an impetus towards creating a coherent whole", the bad news is that the NCC [National Curriculum Council] "is not yet ready with practical advice about how to achieve this splendid goal". Since then of course there has been so much back-tracking on the part of an obviously - and increasingly - confused government, in relation to both the structure of the curriculum and the programmes of testing, that the concept of 'coherence' is almost a joke. It is now up to teachers, as always, to restore credibility to the idea of curriculum coherence - for it is important, and to work out what it might mean in practice: to reflect on those areas of classroom experience where coherence is important for learning, what it looks like in relation to organisational structures and what it looks like in relation to processes for the construction of meaning, how it might best be achieved, how its existence can be recognised, and how it is understood and experienced by students.

This paper tries to assist with such a task by first setting out some different angles on coherence that writers in education have identified and worried about, and then by trying to see how students think about 'making sense of learning' - which is the nearest we can get in our conversations with them to the abstraction, 'coherence'.

### Some angles on coherence

Despite the emphasis placed by the NCC on curriculum coherence, we have no reasoned exploration of its claim; its virtue is assumed rather than justified. At the same time, we can see how - perhaps because there is no clear definition in relation to learning - the concept is easily appropriated. There are, for instance, two obvious areas of overlap: an easy slippage between 'coherence' and 'commonality' and a more predictable slippage between 'coherence' and 'consistency'.

'Commonality' is sometimes seen as a sort of coherence of experience across different groups or populations. In order to understand the basis of the slippage we need to

recall the conditions that gave impetus to the development of the national curriculum. While the movement towards comprehensivisation made some progress towards establishing a 'common school', it remained politically controversial and divisive and there was little parallel progress towards a common curriculum. Interestingly, the Schools Council for Curriculum and Examinations had, since its inception in the late 1950s, concerned itself with *curriculum development* rather than with *curriculum planning*, and was in fact "dedicated to a programme of alternative curricular offerings from which teachers could freely choose" (see Lawton and Gordon, 1987, p108; in Chitty, 1989, p110). Sheila Browne (former Senior Chief Inspector) acknowledged the problems created by such diversity:

To take the whole curriculum, can it be right that the experience of pupils in our secondary schools and even in the same school is so diverse? Should there be such a difference in shape between the curriculum for the academic and that for the less academic? Is there really no such thing as a secondary curriculum proper for all pupils? (1977, quoted in Chitty, 1989, p109)

The national curriculum is, in part, a response to a sustained plea among a number of educationists (prominent among them were Lawton and Skilbeck) for a common curriculum. It does, of course, also serve a political agenda and the criterion of commonality is, in fact, imperfectly realised (for a critique, see Simon, 1990).

Coherence-as-consistency is a sort of coherence across behaviours, an imposition of sameness. Where 'coherence-as-commonality' is historically situated within a discourse of equity, 'coherence-as-consistency' is located within the discourse of managerialism. Here, it links to the concern for bureaucratic efficiency and control which, Chitty argues (1989), is the driving force behind the production of the national curriculum. Buchmann and Floden (1992) comment on similar trends in the United States. They suggest that when educators invoke coherence, "they veer towards consistency as a proxy of worth and effectiveness". They go on: "the call for program coherence comes out of the same longing for certainty, order and control that lies behind movements for all sorts of social engineering" (p4). Indeed, the concern in this country with the identification of competences for judging the performance of new teachers may reflect what Buchmann and Floden see in the US as a compulsion to "turn out model teachers or learners with the same reliability and precision that we can fabricate cars or refrigerators...." (1992, pp4-5).

Thus, as Chitty (1989) and Lawton (1993) help us to see, the concept of 'coherence' is caught up in the tension, characteristic of contemporary educational policy-making, between 'the professional' and 'the bureaucratic'. Whereas the former respects individual differences and the complexity of the process of learning, the latter is driven

by a preoccupation with "norms or bench-marks, norm-related criteria and judgments based on the expectations of how a statistically-normal child [or teacher?] should perform" (Chitty, 1989, p106; parentheses added).

This is not to say that coherence is not a desirable aspiration; rather, that we do not know exactly what it is that we are looking for, and that its links to ideas of 'commonality' and 'consistency' need to be looked at critically. We might also be wary about assuming that frameworks for learning that 'make sense' to curriculum planners will also 'make sense' to teachers, and that what seems to 'work' on paper will automatically 'work' in the classroom. The curriculum should be justifiable and it should reflect sound principles of design - but design must respect the professionalism of teachers and allow scope for the exercise of their informed judgment and individual expertise. As Lawrence Stenhouse said (1980), we do not train teachers "in order to produce a world fit for curricula to live in". A well designed common curriculum may, to some extent, compensate for the shortcomings of poor teachers but it must also provide space and challenge for the very best teachers: teaching, like learning, "has to be an adventure, otherwise it's stillborn" (Canetti, 1978, p75).

David Hargreaves (1987) takes this argument further by focusing on the learners. He questions the easy optimism of curriculum planners who stop short at the design stage, suggesting that coherence in the curriculum can only be understood in terms of each *student's* response to what the curriculum offers. According to this perspective, coherence is actively constructed rather than passively received. Students bring with them their own resource of experience and understanding, and coherence represents the linking of new insights, knowledge and skills into that resource. Coherence works through enhancing what students already know, understand and can do; it is about "connectedness" - how new curriculum experiences can be meaningfully taken on board by individual students. As Buchmann and Floden (1992, p4) have said: "coherence allows for many kinds of connectedness, encompassing logic but also associations of ideas and feelings, intimations of resemblance, conflicts and tensions and imaginative leaps". This perspective does not call into question the need for pattern, orderliness and inter-relatedness in curriculum design; rather, it suggests that there is one form of coherence that is about structures and another form of coherence that is about meaning. Where coherence at the level of structure or framework seeks to avoid contradiction, ambiguity and untidiness, coherence at the level of meaning allows "loose ends [to] remain, inviting a reweaving of beliefs and ties to the unknown" (ibid).

There is another angle on coherence that pre-dates the national curriculum. It focuses not on structures nor on connectedness but on the way in which knowledge is presented in the curriculum. It argues the importance of allowing

students to confront 'dis-integration' - or, put less dramatically - to accept the reality of clearly argued and seemingly irreconcilable difference. A simple example comes to mind: in an earlier project, sixth form students were interviewed about their experiences of teaching and learning and the following comments - all relating to history at A level - illustrate the problems they had in coming to terms with 'difference':

I mean, there are two people there who supposedly have been paid a lot of money for writing books on it (ie the life and character of Richard III) and they have two entirely different opinions - I mean, what am I supposed to think?

You get one book and you find one thing and then you open another and find somebody else arguing a completely different thing...It is a bit of a fiddly subject.

Every now and again you get two ideas and each of them have points backing them up and then it starts getting difficult...I usually try to actually make a choice out of the two..because I end up getting in a muddle if I try and work from sort of two points. (Rudduck, 1991, p42)

Scheffler (1973, p106) maintains that it is "an educational experience of the highest value to be confronted with ....differences at an appropriate age":

....to learn at first hand the disjointedness and incongruities which no administrative integration can forever hide...to learn that the opinions and approaches of experts differ violently, that the community of truth seekers is not just one happy family...A student who gets all his [or her] education screened through some neat integrative framework imposed in advance by others, without being forced to make his [or her] own sense of the discordances and discrepancies patent in experience, has been effectively protected from thinking altogether. (Quoted in Buchmann and Floden, 1992, p5)

These are some of the issues that, in our adult worlds, confound the discussion of coherence. In the world of the student, there are fewer competing perspectives. Before turning to what students say, we offer a cautionary text - a passage by an American writer, Mary Alice White:

The analogy that might make the pupil's view more comprehensible to adults is to imagine oneself on a ship sailing across an unknown sea, to an unknown destination. An adult would be desperate to know where he (sic) is going. But a child only knows he is going to school....The chart is

neither available nor understandable to him...Very quickly, the daily life on board ship becomes all important....The daily chores, the demands, the inspections, become the reality, not the voyage, nor the destination. (White, 1971, p340)

### How students talk about 'coherence'

In this section of the paper we draw on data from a study funded by the ESRC as part of its Initiative (coordinated by Dr Martin Hughes) on the quality of teaching and learning: Making Your Way through Secondary School: Students' Experiences of Teaching and Learning (1991-95). We are following three groups of students (one in each of three comprehensive schools in three different local education authorities) through their last four years of compulsory schooling. The students were 12 when the study started and will be 16 when it ends. The students are interviewed - initially in pairs but thereafter individually - once a term. We are asking them about their experience of schooling: their image of themselves as learners; their sense of their own progress and problems in learning; their attitudes to different subjects and their feelings about different forms of grouping within subjects; the sources of their enjoyment and achievement in learning; their friendships both in and out of school; their out of school activities and their aspirations for the future. Our central concern is with the students' 'school careers' and what happens as they move through the last four years of compulsory schooling in terms of motivation, engagement, sense of self and sense of future (see Harris and Rudduck, 1993). The student data are contextualised by interviews with teachers and by the analysis of relevant school records and documents. Our students are part of the first cohort to encounter work for the Key Stage 3 SATS in the summer term 1993 - although, in the event, most schools boycotted the tests.

Data are mainly from the second year of interviewing, when the students were in Year 9 (Y9) and were, on average, 14 years old.

We have not found it easy to explore directly the idea of coherence with the students we interviewed. Instead, we asked about subjects they thought they were good at (or not), and subjects they thought they were making good progress in (or not); we asked them about aspects of subjects that they liked and disliked and about teaching styles that they found helpful. We also asked about cross-curricular themes and about option choices. From the data we can begin to construct a picture of 'coherence' in terms of the things that students can make sense of or understand within subjects and across subjects and the things they do not make sense of or understand; the data also allow us to begin to speculate about the reasons. In general, we can say that where learning is going well 'understanding' is not

something that students are necessarily conscious of - it is something that just happens. Moreover, they are unlikely to be aware of 'misunderstandings' until these are pointed out. But students do talk quite a lot in interview about 'not understanding'.

### *Not understanding*

Sometimes it is something quite specific that students cannot grasp; they seem to have a clear idea what it is they have problems in "latching on to". One student, for instance, who does not play an instrument, could not understand what 'notes' were in music; another was thrown by the idea of 'grids' in geography and 'square metres' in maths; and another was thrown by the idea of 'circuits' in science.

There are different reasons why students fail to understand particular aspects of the content or process but what came across strongly in the interviews was their concern to get a grip on what was puzzling them. They are understandably upset when they know that they are struggling to get hold of a new idea or approach and their teacher blames their not understanding on "not listening" or implies that they if they do not understand they must be stupid. A student sums up the mixture of frustration and resignation that he feels when pleas for help are not met:

Like you ask him to sort out a question - like, say, if you are really stuck. You are waiting for about ten minutes and then when he comes over to you he gives you a right lecture about it. He just like goes on and on and on and then right at the end when you want to know the question he won't give it to you.

*What can you do about that?*

Ignore him and get on by doing it yourself.  
(M, Y9)

Students who want to understand express irritation with peers - more often than not it is with male students - who disturb the work of the group and who commandeer too much of the teacher's attention:

When we are trying to do it on our own the teacher is too busy telling people not to do stuff because there's lads in our group...banging and everything and we can't understand what he's saying and when we get it wrong he shouts at us for not getting it right, but it's not us really. (F, Y9)

They would like their teachers to spend more time on supporting learning and less on dealing with disruptive behaviour.

Indeed, the general plea (see also Brown and McIntyre, 1993, chapter 2) is for more time spent on careful whole class explication of the task, the formula, the principle or the concept, and then opportunities for individual help, with the teacher's time distributed fairly across the members of the group who want help. The need for more individualised dialogue once the new content or task has been explained to the whole group is expressed by students in groups set by ability as well as by students in mixed ability groups. In 'top sets' the expectation seems to be that students must grasp something when it is first explained - there is no 'second chance' or time for one-to-one exploration of difficulties: "If you don't get it [first time] you just get left behind" (F, Y9). The pressure to 'keep up' can be considerable. In 'top sets' the work ethic may be strong but it is not easy for individual students to say publicly that they do not understand and they therefore appreciate opportunities for regular consultation with the teacher which they can take advantage of without losing face; their alternative, if they do not understand something, is to establish a pattern of collaboration with a friend.

Where setting is an established practice in a school, students seem more accepting of being allocated to a slower or bottom set (as Oakes's research suggests: 1985, chapter 1); they appreciate the chance to work at their own pace, to have more opportunity for individual consultation with the teacher and to escape from pressure - but this sense of relief is being bought at the price of a gradual acceptance of a particular self-image. In contrast, where setting is new or confined to only one or two subjects, many students who are put in a bottom set are not so ready to accept their lot; they want to achieve and hope that by achieving they will move into a 'higher' set. They are sharply aware of any unfairness that might hold them down (for example, being told that they can move up if they do well in the test, and this not then happening; or being away on the day of the test and not being allowed to sit it later). These students are particularly concerned about the difficulties, in their group, of understanding things properly. There are also students who mask their concern about being in a low set by claiming that they are "not bothered". Maintaining the image of being "not bothered" may prevent them from seeking help when they don't understand or may induce them to sustain a restlessness which occupies the teacher in surveillance rather than in teaching - as we saw above: the conditions are then in place for a downward spiral of engagement and achievement.

Sadly, in our view, there seems to be a trend, both within our three schools and across secondary schools generally, to reintroduce setting by ability. Even teachers who have been firmly opposed to setting are now beginning to acknowledge the difficulty of handling, within the same group of students, different content to match the different national curriculum 'levels' which the students have been

assigned to. At the same time, we would claim that the teachers in our three schools, like the teachers in Jeannie Oakes's study, "intend the very best for [their students]...want [them] to achieve academically and to develop personally and socially in positive and healthy ways" (1985, p5). The consequences of setting in schools that have not practised it before (and also in those that have), and the difficulties that students in different sets face in trying to understand key aspects of the teaching - these are, we think, things that need to be looked at urgently if students are to maintain their commitment to do well and their self-respect among their peers.

So far we have been discussing the difficulty that some students have in making sense of particular topics. But there are also situations where the experience of not understanding is more profound. Sometimes it is the students themselves who have, over time, created conditions where learning is impossible and they later find that they have no foundation for understanding new work. They are often pretty straight about this but do not see what to do about their predicament:

*Why is it that (subject) is a bit of a struggle?*

Because I am not paying enough attention. Because last year I were in trouble a lot [in those lessons] so I didn't get to learn much. I just kept sulking and not paying no attention and it has all come back on me this year.

*Do you think you will catch up?*

Oh, no. I am too far behind.  
(M, y9)

For this student there was in fact an escape route: this happened to be a subject that he could drop in Y10. Another student, however, has had long term problems in a subject that he cannot drop and that he knows is part of the core curriculum. Like the last student, he is finding that he has no scaffolding for learning:

In the past I didn't used to do any [work]. They used to leave the answer books on the side so I used to just look an answer book up and copy the answers out. (M, Y9)

Again, the student can see no obvious way out of his dilemma.

Sometimes a student will find that she or he can suddenly feel lost with a subject as a whole. We noticed that subjects can seem to change character quite dramatically - with a new teacher, or when students move into a top set, or when new - and usually more abstract - subject matter is introduced. The result is that students can quickly lose confidence and feel negative towards the

subject. This can happen in languages, for example, when the emphasis in skills work changes - one student in Y9, for instance, wanted to drop a language because she did not like the intensive work on listening. It can also happen in science, when practical work in class and outside visits give way to more abstract tasks: "I enjoy going out and that but when you come back doing things like hydrogen...God, it's hard. Because now we use diagrams like - you know, them round balls what are joined together. I don't know what they are called. We are using them now and I find it right difficult with that" (F, Y9). Another student in a similar position acknowledged that she had really liked the subject that she was now having difficulty with, wanted to continue with it as an option, but was "scared" that she might "end up not passing [at GCSE] or not doing very good because I don't understand it" (F, Y9).

We must emphasise that these are students who want to learn but who easily come to feel that they have little control over their own learning, who do not believe that they have a right to press for understanding, and who do not feel important enough to trust that teachers will respond positively if they make demands of them; instead there is a sad resignation in some of the comments: "Want to do somat about it but we can't do ought" (M, Y9).

Another reason why some students have only a limited or superficial grasp of key features of the curriculum is, of course, because they have not attended school regularly - some involuntarily through illness and others through choice. For some students in both categories the problems of catching up loom so large that the only way to deal with the dissonance is to continue to stay away. A boy whose absenteeism has become more frequent during Y9 - the year when he and his peers accept that learning is really starting to matter - comments on the problem:

*So what do you do if you stay off*

*Play on the computer all day.*

*How do they help you catch up on what you have missed.*

*I've never caught up. I've always been behind. [I wasn't] too bothered about it though. But it's just starting to worry me now as I am getting older. (M, Y9)*

Such students do not see how they can cope when their foundations for learning are so fragile and when they know that the work is "getting harder". They may - as one student explained - skip a series of exercises in maths in order to catch up with their peers - but they then find that there are segments of the logic that they do not understand with the result that they cannot build effectively on earlier learning. Teachers in all three of our schools care about their students' progress and spend a lot of time checking up on absences, visiting homes, discussing the situation with

students when they do attend, arranging for extra support in particular lessons, but in the present financial climate resources do not allow the amount of individualised help that irregular attenders need if they are to catch up and take their place among their peers with self-respect and with some hope of doing well.

### *Coherence across the curriculum*

We did not gain much idea from the interviews as to whether students had a sense of coherence across the curriculum. We enquired about the functioning of the cross-curricular themes but we found that teachers were so worried about coping with the daunting and seemingly ever-changing orders in the core subjects that cross-curricularity tended to be assigned a relatively low priority. However, where work on the environment had been substantially developed, students recognised that they were encountering related content in different subjects:

We're doing about it in science. It's ....like all different environments like what the soil's like and rocks and climates and stuff like that.

*And that's all in science?*

We've got a bit of it in another subject because we're doing about the equator and that.

*So you've got two lessons where you're doing that. Is there any link across?*

Maybe, because we usually do things in pairs. Like if we're doing something in world studies we learn about the half side of it and then....we learn the other half of it in there, something like that.  
(F, Y9)

Another student also responds positively to the linkages:

At the moment we're learning in science about the ozone layer and the soil and we're doing almost the same sort of stuff in world studies....So I can relate that to each lesson, so I'm learning from one lesson and taking it to the next lesson.  
(M, Y9)

But although these students were aware of environmental issues and were enjoying the work, we could not tell whether they had, as yet, any real sense of how the different subjects offered different perspectives on the topic. Perhaps this sophistication matters less than the mere fact of their awareness and interest. Teachers were experiencing tremendous pressure in finding their way round the new curriculum structures, especially at Key Stage 3 and it is

not surprising if the coherence promised by cross-curricular themes cannot yet be explored.

Cross-curricular coherence apart, we wondered whether it was important that students had a sense of coherence within a subject. Maths seems always to be about numbers and history about things past, but English - if students stop to think about it - can seem either excitingly varied or bewilderingly diverse: for instance, lessons can focus on a modern novel, speech marks, doing Shakespeare, watching a film, spelling, writing letters to get information for a project, writing a poem, reading a poem, drawing pictures to illustrate some image in the poem, acting out a situation, learning to write on computers, learning to read confidently out loud, writing neatly, doing grammar, writing a diary. Finding a principle that holds these items together is not easy and English tends to be what Mr X does in English lessons! But even this simple logic does not work for all subjects. Mostly, at this stage, students have one teacher per subject (what the substitute teacher does is easily bracketed) but occasionally, where there are staffing problems, then a group will have two or even three teachers for a subject. This may be a privilege in the sixth form - although even here students find it difficult to get used to (see Harris et al, 1992) but at Y9 students are likely to be disoriented:

I don't know whether we are getting more or less done. I think we are getting more done because we are learning three things at once. (M, Y9)

Another student, in a different class, comments on a similar experience:

For [subject] I have a different teacher on a Monday and then one on Wednesday and then another on Thursday and we are all doing different subjects (ie topics) with each teacher so its hard to keep up with them....The things that we are doing, like on the Monday - I don't remember what we are doing. But on Wednesday we are doing about fields and on the Thursday we are doing about - I have forgot what they call it, something with all the symbols. (F, Y9)

#### *Understanding: the importance of 'connectedness'*

An earlier study (see Hull et al, 1985; Rudduck, 1984) suggested that students rarely had much sense of the overall direction that their different courses of study were taking and it seemed that students did not feel that it was important to know, or that they had any right to know, where lessons were heading or how they fitted together. The students we interviewed were in the main prepared to live in the present and to take lessons as they came without much concern for overall sequencing in learning. For most students, variety was the spice of classroom life but when they began to reflect on the seriousness of learning - as

many do in Y9 - then they saw that security does, to some extent, lie in understanding how things relate and in mastering one topic before moving on to the next. We wonder whether it might be helpful for students to have some sense of how the learning in different subjects is structured and in which ones individual progress is dependent on mastering the internal logic - the internal progression - of the subject.

It was also noticeable that when students spoke about project work, whether in technology or in another subject, they had a strong sense of purpose, strategy and goal. And when they talked about work in art they were often very articulate in explaining what they were trying to achieve. Clearly, the coherence of particular tasks is greater when students have a degree of control over the planning and execution of the work or, alternatively, when the content is seen to relate to their out-of-school interests or directly to aspects of the outside world. One student commented on her dislike of two things in Y9: preparing for the SATs and "having to write things that nobody's really bothered about" (F, Y9). Subject-based work links to the outside world in different ways. One student responds positively to history partly because he respects the teacher's authenticity - as a professional and as a person in the world-outside-school: "I don't know, it's like, in his way, he's just like a historian...And it's because...when my mum were younger her friend used to go out with him" (M, Y9). Science and geography offer more generalisable links:

In science we've been doing more interesting things, more like what's going on around us - like testing on animals and we are doing pollution. (F, Y9)

And in geography we are going on the field, looking in rivers and things like that and I enjoy that. (F, Y9)

Geography - it is like round you. (F, Y9).

We are doing about how to use maps, about what effect weather has on rocks and all that...when we're driving down side of road and we're looking for a place, I can tell my dad where it is...where before I couldn't. (M, Y9)

In explaining her choice of social science as a Y10 option one student offered a string of topics that she found appealing. To us the list - babies, first aid, surveys of people, traffic - seems incoherent but the items do have one thing in common: they are all "things outside school" (F, Y9). A similar 'reality' criterion is used to describe what would make music better - quite simply, and logically, "to do a bit more to do with music - not just writing about it - like practising on drums and on organ and on guitars and all that, like experimenting with what you like to do" (M, Y9).

Not surprisingly, outings and trips - an obvious means of locating learning in the world outside school - score particularly high in students' ratings. They can last a day or a half day (eg a visit to a local historic monument or a field trip) or, more occasionally, a week (eg a trip abroad to take part in a musical exchange or improve confidence in speaking a foreign language). Such events lie outside the boundary of the normal - that is their power - and they are difficult to assess in terms of curriculum coherence. For teachers they may be useful novelties that keep at bay the threat of student boredom and disengagement from learning but they can also be a strategy for 'connectedness' - a means of linking learning to the world outside school. They can also be a way of consolidating learning - an opportunity for applying what has been learned, in a practical setting - a time for reflecting on and seeing the relevance of a sequence of classroom work. In most cases they are highly motivating experiences with a potential for rendering understanding more concrete and meaningful.

Outings are only novelties in contrast to the routines of everyday classroom work. In Y9 some students were prepared to accept the routines of schooling because that was what life was like - or because they were looking ahead to the prospect of employment:

I hate Mondays. I hate sort of getting into everything [again]...Sometimes it's a bit of a drag.... (F, Y9)

I'm not bothered about it [school work] but I'll do it because I know I've got to and I want to have a good occupation. (M, Y9)

But routine can of course be enlivened on the students' own initiative - "having a laugh" for many remains a positive, and shared experience that offers some sense of control and enjoyment - experiences that Goodlad (1984) noted were sadly absent from many classrooms in the US.

Lessons that follow a predictable routine can be experienced as boring but they also offer a certain security in learning. For instance, students know where they are in French because they can understand the structure of the task: it may be to learn vocabulary that will take them through a normal day - getting up, having breakfast, going to school and so on; and they know that this set of vocabulary will be consolidated before they go on to the next task. In a similar way, the SATS, although they generated anxiety, also provided a frame for learning: "I'm looking forward to some of the tests what's coming up because when I know what sort of tests they are and I know what to study on, then I can start studying on that and that will be interesting" (M, Y9). We noted how often students said, in Y9, that they wanted to work harder - get their head down, muscle down, improve - but they didn't always know what that meant or how to set about it. The SATS were

seen by some as providing a structure within which 'working harder' - whatever it involved - seemed to make sense.

A reliance on routines and regularities in lessons can ultimately limit more adventurous learning - even as institutional routines - the "daily schedule" as Mary White described it (1972, p339) - can come to dominate students' mental maps of what matters in school. Silberman (1971, p362) picks up on this point, suggesting that for students, the "institutional requirements" may seem more important - because more regular, more visible and more comprehensible - than the educational aspects of schooling.

### Comment

In this paper we have focused on the 'coherence' of students' experiences of learning and their difficulties in understanding or making sense of their school work. We have tried to identify concerns that the students themselves recognise and talk about, both within and across subjects, and - albeit briefly - in relation to learning experiences in different ability groups. We have also looked at understanding in relation to the way that school work is seen by students to connect with their frameworks of experience and interests outside school. And we have looked at the conditions that make for 'not understanding' school work, including absence, and the problems, in their words, of 'catching up', and in ours, of building a strong scaffolding that will enable them to locate and integrate new learning. The interviews made us aware of the way that the seemingly inevitable routines and regularities of schooling, as well as the way that learning is structured through subjects, can lead students to accept what is offered, with little reflection on the overall relatedness of knowledge, skills and understanding.

There are, of course other ways of looking at coherence, other questions to be asked. We might, for instance, consider students' right to know where different curriculum paths are leading - and whether having a working map of curriculum directions will enhance motivation. Or we might explore the tensions between imposed frameworks and the desire of young people of 14 or so to have some sense of control over their own learning (see Harris, forthcoming). There are other questions about the way that option choices are made in Y9 and whether the choices that students make contribute to a balanced as well as a broad curriculum. There are also questions relating to the conditions of learning and whether the ways of working experienced in schools prepare young people for ways of working outside schools. (We recall the puzzlement of an adolescent who asked, "What is school? It's not labour [ie paid work,] and it's not play - so what is it?").

And there are questions concerning the way that the different identities of young people are constructed and whether personal 'coherence' is compatible with the multiple

identities that many of our students acknowledge. A related issue concerns the effect of the sorting and labelling procedures that all schools seem to rely on - the "dividing practices...[that operate as] technologies of modern power" (Meadmore, 1993, p59). Do teachers in fact construct a single, dominant identity for each student (see Waterhouse, 1992) which some students accept and move towards and which some struggle to escape from?

And finally - returning to Scheffler's concerns outlined in the opening section - there are questions about the way that intellectual uncertainty is handled in the classroom and whether teachers 'absorb' too much of the contestation in the interests of presenting young people with a view of knowledge that is 'coherent' in the sense of being tidy.

These are all concerns that the data from our present study, which is confronting what Silberman (1971, p364) calls "the sheer complexity of students' experiences in school", should, in time, enable us to explore.

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