The Effects on Schools and Pupils of Modularising GCSEs

Maggie Heinrich & Neil Stringer

ABSTRACT

In 2009, a suite of revised GCSEs was introduced for first teaching. For the first time, all subjects were offered in modular specifications, where previously the majority were only offered linearly. For some time, modular assessment – and resits in particular – have featured in the public discourse on standards. Despite Ofqual incorporating rules to limit resit opportunities and to require forty per cent terminal assessment in new GCSEs, the coalition government expressed concerns over modular assessment early on, particularly at GCSE. In anticipation of a consultation on reverting to linear assessment, a study was conducted to gain some understanding of schools’ experiences of using the newly modularised GCSEs. A series of semi-structured interviews was conducted with (mainly) deputy head teachers in a variety of schools, sampled according to governance model. Participants were asked about the effect of modular assessment on teaching and learning, and the wider impact on financial and organisational aspects of schools. The findings suggest that the burden of assessment associated with modular GCSEs limited the number of subjects in which schools adopted a modular approach. There was also an apparent divide between independent/selective schools and comprehensive schools: the former generally teaching fewer modular subjects than the latter. Nonetheless, schools with mixed and lower ability pupils reported a number of benefits to teaching modular GCSEs compared with linear ones. These included greater motivation and engagement following success in early exams and the spreading of the workload for pupils who, for various reasons not necessarily related to ability, tend to underperform in terminal examinations. Before the interviews were completed but, more importantly, before the modular GCSEs had time to bed in, the government announced that all GCSEs would revert to linear assessment from 2012. Nonetheless, with A Level Reform in progress and the school leaving age set to rise to 18, some of the findings of this study could still prove useful.

Keywords: modular, GCSE, examinations, resits, thematic analysis

INTRODUCTION

A revised suite of GCSEs was introduced for first teaching in 2009. For the first time, all subjects were offered as modular specifications, in which the course content was divided into units with opportunities for assessment at particular points during the course. Modular GCSEs are normally assessed in January and June, although some subjects such as science and maths are available in March, June, and November. Previously, only a small number of subjects, including sciences, maths, and modern foreign languages, were available in a modular format. The majority of subjects were assessed in a linear fashion, whereby all of the examination papers were taken in the same summer series, typically in Year 11 following two years of study. The Office of Qualifications and Examinations Regulation (Ofqual) Criteria for

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1 Except English subjects, mathematics, ICT, and sciences, which followed in 2010.
GCSE Qualifications (Ofqual, 2011a) have permitted unitised assessment since 1999\textsuperscript{2}, so the recent proliferation of unitised specifications was led by one or more awarding organisations rather than the regulators, whose qualification criteria have maintained a neutral stance (Tina Isaacs, personal communication).

When A-levels were modularised as part of curriculum 2000, no restrictions were placed on the number of attempts that a candidate could make at each examined unit. This may have been due, at least in part, to the limitations of the IT systems used by the awarding organisations to process pupils’ results. The rules developed for the new GCSEs were, however, more stringent. Even before their introduction, there existed a public discourse on the “dumbing down” of examinations, of which modularity was a significant part. In contrast to the A-levels and the existing modular GCSEs, the 2009 GCSEs had two entry rules intended to waylay such concerns. Firstly, pupils could only retake each unit once prior to certification. Secondly, a minimum of 40\% of the assessment had to be taken in the series in which a candidate entered for certification or “cashed in” his credits; this was referred to as the “terminal rule”. Despite these measures, the Secretary of State for Education, Michael Gove, announced in the spring of 2011 that, from 2012, GCSEs could only be taken in a linear fashion (Department for Education, 2010).

Lamentably, there is a dearth of published evidence about the effects of modular assessment on learning and examination outcomes and how they compare with those of linear assessment. This paper reports on the findings of a study that sought to capture schools’ views of the new modular GCSEs at a time when the first cohort of pupils eligible for certification were taking their final examinations. In anticipation of a formal consultation, the study was planned to inform the debate over the merits of reverting to linear GCSE specifications. As such, it was intended to identify the benefits and drawbacks of using modular GCSEs that were important to schools and their pupils. As it transpired, there was never a debate or consultation on the reforms, only on how they would be implemented. Nonetheless, the findings of the study might contribute to an evaluation of the decisions that led to the wholesale modularisation of GCSEs, particularly in light of schools’ experiences of delivering modular specifications. The findings also raise some more fundamental issues regarding how assessment structures can differentially affect particular groups of pupils and whether these choices can be justified by the uses to which the examination results are put.

**METHOD**

**Design**
The data were collected during semi-structured interviews. Thematic analysis was used to analyse the transcripts of the interviews.

**Sample**
Schools were recruited from within Surrey, north Hampshire, and south London. The initial intention was to draw a stratified sample to ensure coverage of each of the various governance models and to explore whether a school’s funding arrangements influenced its policy on modular assessment, particularly resits. The rationale was that funding differences may lead to variation in the way that resits were prioritised. Without stratification there was a risk that the relatively small sample would under-represent or omit some types of school.

\textsuperscript{2}This criterion was somehow omitted from the 2004 revisions, which took into account the switch from GNVQs to applied GCSEs, but was reinstated in 2006.
Schools were picked randomly from each stratum; however, owing to difficulties with recruitment, opportunity sampling was used. Nevertheless, the sample obtained represented a good cross-section of the range of different types of secondary schools in England. Table 1 illustrates the breakdown of all English schools and the present sample by governance model. Schools included in this sample, other than independents and one voluntary aided school, were non-selective.

Table 1. English secondary schools by governance model (Department for Children Schools and Families, 2008) and study sample by governance model.

<table>
<thead>
<tr>
<th>Governance</th>
<th>No. in England</th>
<th>%</th>
<th>No. in sample</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Community</td>
<td>2,112</td>
<td>50.0</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>Independent</td>
<td>823</td>
<td>19.5</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>Foundation</td>
<td>564</td>
<td>13.4</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>Voluntary Aided</td>
<td>554</td>
<td>13.1</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>Voluntary Controlled</td>
<td>113</td>
<td>2.7</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Academies</td>
<td>46</td>
<td>1.1</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>City Technology Colleges</td>
<td>10</td>
<td>0.2</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,222</strong></td>
<td><strong>100.0</strong></td>
<td><strong>20</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

In total, 87 schools were contacted and 20 agreed to participate. Face-to-face interviews were held with 21 staff, whilst one examinations officer provided answers by e-mail. Table 2 details the participating schools and interviewees.

Had the study aimed to quantify schools’ use of modular specifications or responses to questions in a way that could be generalised to all schools in England, the proportion of non-responses might be a greater cause for concern. As it is, the study simply sought to identify issues, not quantify them.

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3 Estimated from 2001 figure c/o http://news.bbc.co.uk/1/hi/education/115872.stm
Table 2. The study sample by geographical area, type of school, admissions criteria, and the role of interviewees.

<table>
<thead>
<tr>
<th>Geographical Area</th>
<th>Type of School</th>
<th>Admissions Criteria</th>
<th>Role of Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrey</td>
<td>Community Comprehensive</td>
<td>Deputy Head</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community Comprehensive</td>
<td>Examinations Officer</td>
<td></td>
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<tr>
<td></td>
<td>Independent Selective</td>
<td>Director of Studies</td>
<td></td>
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<tr>
<td></td>
<td>Independent Selective</td>
<td>Head teacher &amp; Director of Studies</td>
<td></td>
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<tr>
<td></td>
<td>Independent Selective</td>
<td>Teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Independent Selective</td>
<td>Deputy Head</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voluntary Aided Comprehensive</td>
<td>Deputy Head &amp; Examinations Officer</td>
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<tr>
<td></td>
<td>Voluntary Aided Comprehensive</td>
<td>Deputy Head</td>
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<td>Voluntary Aided Comprehensive</td>
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<td></td>
<td>Voluntary Controlled Comprehensive</td>
<td>Deputy Head</td>
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<tr>
<td></td>
<td>Foundation Comprehensive</td>
<td>Examinations Officer</td>
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<tr>
<td></td>
<td>Foundation Comprehensive</td>
<td>Teacher</td>
<td></td>
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<tr>
<td></td>
<td>Foundation Comprehensive</td>
<td>Deputy Head</td>
<td></td>
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<tr>
<td>London</td>
<td>Voluntary Aided Selective</td>
<td>Examinations Officer</td>
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<tr>
<td></td>
<td>Voluntary Aided Comprehensive</td>
<td>Deputy Head</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community Comprehensive</td>
<td>Deputy Head</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academy Comprehensive</td>
<td>Examinations Officer</td>
<td></td>
</tr>
<tr>
<td>Hampshire</td>
<td>Foundation Comprehensive</td>
<td>Head teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community Comprehensive</td>
<td>Examinations Officer</td>
<td></td>
</tr>
<tr>
<td>Isle of Wight</td>
<td>Community Comprehensive</td>
<td>Teacher</td>
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Procedure
The first contact with schools was typically with the main office or the examinations officer who identified suitable potential interviewees within their schools. The individuals identified were then invited directly to participate in a face-to-face interview.

The interview schedule (see Appendix 1) consisted of seven open-ended questions, each with follow-up questions. Interviewees were asked about: the impact that modularised assessment had on teaching and learning; the extent to which modularised assessment had been adopted in their schools; how schools decided which pupils would resit which examinations and whether funding considerations and school accountability/performance measures influenced these decisions; and whether modular GCSEs were a good or bad thing from various points-of-view. Where interviewees’ experience permitted, they were asked to compare their experiences of modular GCSEs and modular A-levels.

The government’s decision to abolish modular GCSEs was announced after only the second interview. In response to this development a question was added to the interview schedule to gauge participants’ reactions to the government’s announcement.

All interviews were audio recorded and transcribed verbatim. Two researchers analysed the transcripts independently and later compared findings to identify the most frequently mentioned and significant issues, which they organised under themes and sub-themes. To test their generalisability, some of the qualitative findings were explored further by analysing data pertaining to nationwide exam entries for AQA specifications in 2009-2011. To simplify the presentation of the data, the school types have been collapsed into three categories: non-selective; selective/independent; and academies.
RESULTS & DISCUSSION

Thematic analysis was chosen to analyse the interview data because it can be applied flexibly and is not constrained to any particular theoretical framework (Braun and Clarke, 2006). The analysis yielded three main themes and associated subthemes that described the implications of a modular approach to GCSEs in terms of: ‘educational experience’, ‘the wider impact of modular examinations’ and ‘the context of accountability’.

Educational experience

Teaching

The question relating to the impact on teaching of modularising GCSEs (Question 1) elicited contrasting views. Some interviewees argued that the delivery of the curriculum had become disrupted and fragmented, leading some schools to limit the extent to which modularisation was adopted. This theme was most common amongst independent and selective schools. An experienced teacher in an independent school highlighted the degree of disruption caused by modular assessment and the impact that it had on school life:

“The only modular subjects that we have taken at GCSE level are Science. And frankly, it has been a monumental disaster in terms of the fact that the modules crop up, pop up, like jack in the boxes, with no real correlation with the school year, the way the rest of the school exams work and it is very, very disruptive”. Teacher, Independent School

Many interviewees felt that modularity reinforced methods of teaching that were focused on preparing pupils to take an exam. This resonates with previously voiced concerns over ‘teaching to the test’ and its negative impact on pupils’ fundamental understanding of a subject (Baird, Daly, Tremain & Meadows, 2009; Smith, 2004). Such teaching methods were often perceived to stifle creativity in the way teachers deliver material. This concern was reflected in an interview with a deputy head in an independent school in Surrey:

“(…) teaching to the exam is very frustrating because if you are talking about any subject there’s so many ways that you can enrich a subject by talking about the culture or (…) if you are just going off the topic sometimes it’s just great and it really fires up their enthusiasm but if you are continually saying oh we can’t do that because we’ve got to teach to the exams, it’s stultifying for everybody.” Deputy Head, Independent School

This view was acknowledged by many schools, although it was expressed most strongly by the independent schools and the voluntary aided, selective school. These schools are all selective – albeit some more so than others – so they could be expected to have a larger proportion of high achievers than the non-selective schools in the sample.

A more positive view of modularisation was expressed by interviewees from schools that reported having pupils with more varied levels of academic ability. They claimed that modularisation offered greater flexibility for teaching and assessing pupils of different ability sets. Rather than finding the explicit structuring of modular courses constraining, they found it helpful for organising teaching (see also Vidal Rodeiro & Nadas, 2010). A head teacher from a foundation school in Hampshire highlighted this:
“I think [modularisation has] allowed more flexibility with regard to the teaching. We’ve certainly been able to run different courses, different modules, at different times to different groups. Before we tended to be teaching the same thing to more sets in groups in the year (...) it allows them (teachers) planning around a modular curriculum. I think planning is easier, it’s more structured and it also gives them benchmarks, feedbacks to students’ performance and allows them to work on, to give them aids to progress, to reach their potential. (...)So it’s given us flexibility and personalisation” Head Teacher, Foundation school

The majority of interviewees, however, agreed that modularisation was better suited to some subjects than others. Modular approaches to science, maths, geography, and English were adopted more often than they were for modern foreign languages, business studies, or history, for example. Entry patterns for AQA GCSEs were studied to see whether the views expressed by the interviewees were reflected in the nationwide patterns of exam entries. This included identifying differences in entry patterns between subjects and between types of school. Figures 1 and 2 illustrate the entry patterns for the biology units (A & B) of Science A offered between November 2009 and June 2011. The pattern of entry for the chemistry and physics units (not shown) are essentially the same. The percentages of unit entries are based on the total number of unit entries between 2009 and 2011 made by candidates entering for certification in 2011. Where the total percentages across series exceed 100%, this indicates that some candidates resat the unit at least once. For example, 150% is equivalent to half of the candidates entering a unit twice.

Figure 1. Percentage of Science A candidates entering for certification in June 2011 who sat biology unit A (written) in each series 2009-2011.
The analysis presented in Figures 1 and 2 confirmed that all of the examination series were used extensively, regardless of the school type. Science A comprises a large number of components, which are available three times per year, and has been modular for many years. As an outgoing specification, the resit and terminal rules do not apply to it. These facts, together with the perceived difficulty (Coe, 2008) and importance of science, might explain the extensive use of the modularity.

A modular approach was also taken extensively in mathematics. Figures 3 - 5 illustrate unit entry patterns for AQA Mathematics B between 2009 and 2011. The data confirmed that two of the Mathematics modules, which were available in the November, March, and June series throughout the two year course, were sat by pupils across the range of available series. The highest rate of entry was amongst academies with just over 160% of entries for one unit: equivalent to approximately 60% of candidates sitting that unit twice. The final module, available in November and June only, was mainly sat in June 2011.
Figure 3. Percentage of Maths B candidates entering for certification in June 2011 who sat unit 1 (written) in each series 2009-2011.

Figure 4. Percentage of Maths B candidates entering for certification in June 2011 who sat unit 3 (written) in each series 2009-2011.
Another subject in which modular exam entries were deemed to be popular was geography. The geography specification with the highest entry comprised three units: two written papers and a controlled assessment. These were available in the June series in 2010 and 2011, although the entries for the controlled assessment unit in 2010 were negligible. Figures 6 and 7 show national entries for the written assessments. The data showed that pupils in both higher and foundation tiers were entered early for the written units, in particular the first unit; however, the majority of entries for all units, especially for the second written unit (and the controlled assessment) were made in June 2011. This pattern of entry may have been dictated by the terminal rule.
The analysis of the exam entry patterns for Science, Maths, and Geography showed that the majority of schools, regardless of type, entered pupils for exams over a number of series during their courses, but that the extent to which they did this depends on the subject and the limitations imposed by the terminal rule.

The French full course requires pupils to complete two written papers assessing their listening and reading skills. The remaining two units are controlled assessments testing speaking and writing skills. The written papers were available in June 2010 and 2011 and January 2011; the controlled assessments were only available in June series in 2010 and 2011. Figures 8 and 9 show AQA’s national entry pattern for the French listening and reading units, respectively.
The data indicate that schools entered the majority of pupils for French written assessments in June 2011 with a very small proportion of pupils being entered in January 2011 and June 2010. The two controlled assessments were almost always sat in June 2011. This result is in line with the findings from the qualitative evidence, which suggested that the modularisation of GCSEs did not lend itself well to teaching languages. This may be due to the nature of learning a foreign language, where basic knowledge is built upon gradually and, with practice, pupils achieve greater fluency over time (Altenaichinger. 2002, p.10); it could, therefore, be beneficial for pupils to delay exam entry to the last series in order to maximise their performances. The analysis of national data showed that selective and independent schools entered the smallest proportion of pupils in the January series and used few resit opportunities. Non-selective schools and academies used the resit facility to a slightly greater extent. Entry patterns for Spanish and German were very similar to those of French, which further reinforced the view that modularisation was not well suited to modern foreign languages.

The entry patterns in history were also analysed. In the interviews, one history teacher expressed optimism regarding the suitability of the modular approach to teaching history, whilst other interviewees expressed their doubts. The history course consists of three modules: two written papers and a controlled assessment. The first written unit was available in June 2010, January 2011, and June 2011; the second written unit in June 2011 only; and the controlled assessment in June 2010 and 2011. Given the limited availability of the second written unit and the restrictions imposed by the terminal rule, only the first written unit received a significant proportion of entries prior to June 2011, with a small proportion of entries for the controlled assessment made in June 2010.

Figure 10 illustrates the entry pattern for History B unit 1 (written). All schools, regardless of their type, entered pupils in all three available series; however, selective and independent schools tended to enter the majority of their pupils at the end of the course in June 2011, whereas non-selective schools and academies took greater advantage of the June 2010 and January 2011 series.
The interviews indicated that a modular approach was considered less suitable for practical subjects such as design and technology (D&T), drama, and physical education (PE). Entry data for PE and D&T Electronic Products are presented in Figures 11 and 12, respectively; they may serve as a proxy for Drama and specifications for other practical subjects, which showed similar entry patterns. In these subjects, the qualification consisted of one written exam paper and a controlled assessment, which were both available in the June 2010 and 2011 series. In line with the views expressed in the interviews, the analysis revealed that almost all pupils were entered for both PE units at the end of the course in June 2011 across different types of schools. Similar entry patterns were observed in the case of D&T, where the majority of pupils were entered for the written paper in June 2011, with only a small percentage of them having entered for this unit the previous summer.
In the case of the schools represented in the current study, the decision to deliver a subject modularly or linearly was normally taken by heads of departments in consultation with senior management, taking into account the suitability of the subject for modularisation, the suitability of a modular course for the particular pupils, and the wider impact on school life and resources. Most schools did not offer all – or even many – subjects modularly and not all schools would enter pupils for examinations in every series in which they were available. Modularity appeared to have been adopted by degree, in terms of both the number of subjects offered modularly and the extent to which a given subject was taught and assessed modularly. A balance of modularised and linear subjects was perceived as providing access to a fairer educational system for pupils with different learning styles, whilst being minimally disruptive to the school life; a balance that the majority of schools were trying to achieve. The comparison between the interview data and the exam entry data shows that the views of the interviewees reflected the wider national pattern of entries.

Learning

Given the responses to questions about teaching, it is not surprising that strong views were also expressed in favour of and against modularisation in terms of its effects on learning. One of the main concerns was the belief that modularisation promoted short-term retention of knowledge, which could be forgotten once the examination had been taken. Some interviewees, particularly those from independent and selective schools, viewed modular assessment as providing an easier approach to learning than linear assessment and they felt this was undesirable for the development of lifelong learning skills. They were concerned about the apparent link between modularisation and surface learning, a link that has some basis in the literature. Hodgson and Spours (2004) related surface learning to the much quicker pace at which material is covered in modularised subjects compared with linear subjects. With reference to AS-level, they argued that, rather than the demand of the AS material per se, it was the pace at which the material needed to be covered during the first year of the A-level course that was challenging and which could encourage surface learning. Surface learning approaches have been linked to an inability to synthesise information and underdevelopment of analytical skills (Hayward & McNicholl,
It is perhaps unsurprising that some teachers expressed worry about the impact of modularisation on pupils' preparation for the demands of A-levels and University:

“(…) teachers are concerned about fragmentation of knowledge, poorer retention on the part of the pupils, and a concern about how that will lead later on in life through A-Level. And I know A-Level was modularised back in 2000, and that's a concern that was raised at the time then, but also particularly later on at University, those kinds of things, that would be the approach. And the discipline that that builds, which is perhaps a concern that the pupils in their own minds don't see the need to keep the knowledge (...)”. Deputy Head, Community School

The view that modular assessment at GCSE and A-level is poorer preparation for university study than linear assessment is somewhat at odds with the fact that many university courses have a modular structure. At the very least, the majority of courses will have examinations at the end of each year, rather than having all of them at the end of the course. Nonetheless, Wilde and Wright (2007) highlighted the concerns of higher education academic and admissions staff that their students begin university having developed an instrumental learning approach aimed at passing exams, rather than an independent approach to learning for its own sake. Although the modularisation of A Levels was implicated in this, their respondents were also of the view that contemporary A level students’ approaches to learning were influenced by their being highly risk-averse. Some respondents also acknowledged, regretfully, that there had been a parallel move towards modular courses in higher education, which too could reinforce instrumental approaches to learning.

In contrast, the following quotation from an examinations officer at a community school in Surrey, although not disputing any of the above criticisms, describes how modularisation has helped to transform the attitude of pupils towards learning:

“(…) they [students] seem quite positive about it. They see it as a chance to improve and they want to. We haven't had anybody turn up late for anything. That’s surprising. Yes. We've only got two exams left and nobody has turned up late yet. And nobody’s missed (...) A couple of years ago you'd be filling out special consideration forms left, right and centre. Not in the last couple of years. They’ve been there on time, they've had a positive attitude towards the work because they know it’s a manageable chunk rather than covering two years' work.” Examinations Officer, Community School

The opposing views held by the interviewees on the effects of modularisation, rather than contradicting one another, might suggest different concerns related to learning outcomes. It might be the case that the strongest pupils are thought to learn more from a linear course than a modular one, but that weaker pupils are thought to learn more from a modular course. This is in line with the argument put forward by Hayworth (1979) who suggested that low ability pupils require a different educational approach, compared with the more academically able pupils, in order to progress. Hayworth suggested that, because pupils who find learning challenging often get demotivated or anxious about their educational performance, teaching should be aimed at maintaining such pupils’ engagement, including setting short-term achievable goals, providing detailed instructions, and giving regular feedback (Hayworth, 1979). The educational needs of lower ability pupils identified by Hayworth are consistent with the unitised learning approach...
afforded by modularisation. It is difficult to argue against a system that might allow less able pupils to learn more than they would otherwise, particularly when that system can also accommodate those who prefer to be assessed terminally.

**Pupils’ needs**

Teachers identified both advantages and disadvantages to modular assessment; however, rather than modular or linear assessment being better for pupils *per se*, teachers’ responses suggested that the suitability of either assessment structure depends on the needs of individual pupils. This was expressed by a deputy head teacher from London:

“(...) some pupils the way that they learn and develop is that they'll do very, very well with the linear exam, whilst other pupils do better doing shorter exams, doing short chunking, and then they perform better and so their outcomes are better. (...) It’s a thing that will motivate them to keep going. It’s a bit like stage fright, really. Some of them get to the exam and can’t do it. And it’s not because they can’t do it (...) I think for certain learners modularisation has actually opened up the curriculum and opened up college opportunities that they’d never ever have had.” Deputy Head, Voluntary Aided School

The modularisation of GCSEs has perceived advantages for pupils who struggle with retaining large quantities of information – often a defining requirement of terminally assessed courses – as well as those prone to “stage fright”. The impact of test anxiety has been identified as one of the factors hindering examination performance (e.g. Hembree, 1988; Daly, Chamberlain & Spalding, 2010). Highly anxious pupils tend to underperform in comparison with pupils who display greater resilience to anxiety evoked by exam scenarios (Hembree, 1988). Hembree argued that test anxiety is often intensified by the significance placed upon the outcomes of assessment; the higher the stakes the greater the test anxiety experienced. Hembree also found that test anxiety affects higher and lower ability students to a different extent: whilst higher ability pupils seem to be able to overcome the stress of being formally assessed, lower ability pupils are more likely to struggle to achieve a good grade due to their inability to overcome the debilitating effects of test anxiety. The evidence suggests that the withdrawal of modular exams might exacerbate the effects of test anxiety, in turn confounding measures of pupils’ ability, particularly for lower ability pupils.

It can be argued that modular assessment makes qualifications and, arguably, education more accessible for pupils who may struggle with terminal assessments and who may have been discouraged by underperformance in previous such examinations. A number of interviewees reported that some pupils, who might otherwise have been at risk of dropping out, were more engaged with their learning and assessment and that this could be attributed to the manageability of the modular courses and the timely feedback they provided (see also Vidal Rodeiro & Nadas, 2010). Absenteeism tends to peak in Year 11 (Attwood & Croll, 2006), so an assessment structure that encourages attendance and allows pupils to accrue credit in Year 10 was viewed positively in centres where absenteeism had been a problem.

Despite these benefits, some interviewees’ experiences remind us that, at times, a little bit of anxiety can be a good motivator (Derakshan & Eysenck, 2009).

“(…) results tailed off through the year, and the kids became a bit anaesthetised to doing tests, because they were being tested too much; and the specialness, if you like, of it being external tests started
Some schools reported that their pupils had developed “resit mentality”, where they saw the opportunity to resit examinations as an excuse to under prepare for the first attempt (see Taverner & Wright, 1997). A teacher from an independent school in Surrey illustrated this issue by saying:

“It can lead to a student frame of mind which says, ‘Oh that's alright, I can take it again and again and again’. (...) [pupils] didn't have the appropriate mindset. Consequently, they were wanting to take umpteen resits in January, thus taking their eye off the ball (...) that they should have been concentrating on at the time (...) It also led to some staff saying, ‘Oh yes, just take it again, you might just up those points one or two,’ again totally disregarding the impact that has on subjects where there are no retakes in January.” Teacher, Independent School

The increase in the volume of high-stakes examinations, including controlled assessments, was reported to have reduced the importance that pupils place on teachers’ assessments. Consequently, tests that in the past served as dependable measures of pupils’ progress were no longer deemed dependable because pupils often do not perform to the best of their abilities, instead saving their efforts for high stakes examinations (see Ricketts, 2010). Of course, from the pupils’ point of view, this could be a perfectly sensible strategy.

Pupils’ personal circumstances were also identified as a factor worth considering when evaluating the modular approach. A teacher from a foundation school in Surrey said:

“For our pupils especially, with everything they’ve got going on in their lives, I think we’re probably just asking too much of them. So I don't see any issue with it being in a modular fashion for them. I don't think it takes away from their skills, I don't think it takes away from learning about history; it just takes the pressure off a little bit.” Teacher, Foundation School

This evidence highlights an important point: that terminal assessment invokes skills that are not necessarily relevant to the construct the examination purports to measure. The ability to cope with the stresses of one-shot high stakes examinations, or the reading and memory requirements of heavy revision loads, may not be something we wish to measure as part of ‘history’ or ‘chemistry’. Even less defensible is the likelihood that the prolonged and intensive revision required for success in linear examinations brings into play external factors, such as whether pupils have a quiet space at home in which to study, uninterrupted. Not all GCSE candidates will continue to A-level, let alone university. Their GCSEs serve mainly to certify their learning rather than as preparation for higher levels of education. For the purpose of certifying learning, modular assessment may demonstrate greater validity than linear assessment because it does not build in sources of construct irrelevant variance to the same extent. Instead, it can be argued that, to a certain degree, modular examinations provide a measure of mastery, with pupils who resit exams learning more through repeated attempts to improve their grade. The positive effects of resits have been reported in previous research, including improved
retention of knowledge and greater development of higher level cognitive skills (Bolt-Lee & Foster, 2000).

Despite offering a number of potential benefits to some pupils, modular assessment is no panacea. Pupils can be expected to mature intellectually over a two-year GCSE course, so assessing pupils before the end of Year 11 carries the risk that their performances will be weaker than if they had been assessed terminally (Taverner & Wright, 1997). A deputy head representing a community school in Surrey expressed this concern:

“Particularly, there's a great deal of concern about testing the Year 10s too much, because we see them mature as learners a great deal between Year 10 and 11, and we know that children in Year 10 are not as capable of producing the same kind of thoughtful, developed, work [as] in Year 11, and they'd want them to have the space to do that.” Deputy Head, Community school

Similarly, it became apparent that in one of the foundation schools, pupils of different academic abilities were being re-grouped and taught at different speeds and assessed at different points in time in order to maximise their examination performance. Such an intervention was probably a response to the variability in pupils’ need for additional time to consolidate their knowledge before being assessed (see Wheadon, 2011).

One comprehensive school in London had two characteristics which were unique in the sample and served to inform the school's policy to make only terminal examination entries. First, the school had a high turnover of pupils. The interviewee explained that many of the pupils who began GCSEs in Year 10 would leave the school before the end of Year 11 and that other pupils would arrive part way through their GCSEs. Consequently, sitting modules before the end of Year 11 was not sensible because many pupils would then leave without completing the course, while other pupils would arrive after their contemporaries had sat the examinations and would need to catch up. Second, for a significant proportion of pupils, English was not their first language. These pupils tended to need as long as possible to develop their language skills before being assessed in any subject.

“One of the big problems we’ve got with going down the modular (...) We have a very transient population here, in terms of students moving through the school, and we also don’t have amazingly good attendance. So those things, combined, can actually make a modular course quite difficult just in terms of managing the organisation of it. We haven’t got the same students in Year 11 that we necessarily had in Year 10. So if we’d set up a modular course, where modules are taken in Year 10, and the student wasn’t there then it makes it really difficult. If we do a linear course, where they sit the exam at the end, then obviously they can still take the exam.” Deputy Head, Community School

The consistently high absenteeism rates, pupil turnover, and number of pupils whose first language was not English led this school to make an informed decision to maintain a linear approach to GCSEs in order to meet the needs of its pupils.

The evidence suggests that the flexibility afforded to schools and pupils by modular assessment can be used to ease some of the disadvantages imposed on pupils by linear assessment, but
that a modular structure brings its own problems, which can sometimes outweigh the benefits. From the interviews, it would appear that teachers understood the needs of their pupils and have used modularity in ways they judge will best meet those needs.

The wider impact of modular examinations

Organisational aspects

Modular GCSEs are normally assessed in January and June, although some subjects such as science and maths are available in March, June, and November. This has cost and logistical implications for schools and the opportunity to resit modules means that, potentially, the cost of examination fees could almost double. Asked whether funding was a consideration for prioritising entries for resits, a deputy head from a voluntary aided school in London said:

“The school does pay for all of it [examinations] (...) Actually I did some work on that. Maths in 2005 cost £3,000 and last year was £7,500. So it’s doubled. (...) I think the cost implications of going modular have been massive cost-wise for the school because of things like invigilators and everything else that you’ve now got to build in (...)”

Deputy Head, Voluntary Aided School

Schools must provide invigilators for examinations and, if the same examination is available several times each year, the school will need to provide invigilators on each occasion that it enters pupils. Not only could this more than double the bill for invigilators, but it could also multiply the cost and effort associated with recruiting them. Furthermore, most schools have a limited number of spaces large enough to function as examination halls. Assembly halls, sports halls, and drama studios that are commandeered for examinations become unavailable for timetabled lessons in subjects such as PE and drama. Many interviewees were critical of the administrative burden associated with modular assessment. Where many schools in the past had a teacher working part-time as the examinations officer, they now have a full-time examinations officer, in some cases supported by other administrative staff. Incorrect or late entries by schools are met with punitive fees from the awarding organisations and the additional complexity of the modular system had resulted in some schools making costly mistakes.⁴

Independent school pupils pay their own examination fees; all state schools meet the cost of first examination entries and most of those we interviewed met the costs of resits. Some schools reported passing on the cost of resits to pupils; some across the board and others only in cases where the teacher had advised a candidate against resitting. Passing on the cost of resits was seen not only to reduce the examinations bill for schools, but also to encourage pupils to rationalise their decisions to resit. From the interviews, it appeared to be standard practice for schools to base resit advice on how pupils have performed compared with their individual target grade. A pupil’s and the school’s interests are aligned insofar as both can benefit from a resit that improves the overall grade, but neither benefits from one that does not. As a school’s results improve, it may increase its ranking in the league tables. From this perspective, funding resits can be viewed as in investment in the school’s reputation (Hayward & McNicholl, 2007).

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⁴ AQA offers support to examinations officers to enable them to make timely and correct entries and thus avoid late fees.
School timetables are typically full so, when pupils sit an examination, particularly in November, January, or March, they often miss classes. In some schools, pupils were also excused from lessons to attend organised revision sessions, but the majority of schools organised lunchtime or afterschool revision sessions to limit the disruption to teaching. One school was unable to offer additional tuition prior to resits and had found, perhaps unsurprisingly, that resits did not lead to improved grades. The “lottery effect” is a popular myth that, if someone resits an examination enough times, he or she will eventually improve the original result significantly. With the possible exceptions of multiple choice tests in which incorrect answers go unpunished, only well-prepared resits are likely to improve pupils’ grades and typically only the first of those (Wheadon, 2010).

Several interviewees argued that, to get the most out of the modular system, teachers needed to have a system in place for keeping track of every candidate’s unit results and basing resit decisions on whether the candidate stood a realistic chance of gaining enough additional uniform marks from a resit to improve their subject grade. One deputy head told us that some heads of departments had struggled with this and that she now tested applicants for head of department posts on their ability to create such a system in a spreadsheet.

The kinds of costs and disruptions to school life described here contributed to the impression that modularisation could not be fully applied to all subjects. The head teacher of a foundation school in Hampshire explained why a fully modularised approach would have been difficult to adopt:

“There’s no doubt it is problematic in terms of exams. Students coming out to do exams more times during the year means they’re pulled out of other classes, it’s more administration and there is a cost to it. Yes there is a cost to it which eventually, if (…) all the subjects were doing it, at a county school would become prohibitive, certainly for a college like us.” Head teacher, Voluntary Aided School

The success of introducing change to the educational system often depends on how teachers react to it: teachers’ commitment to and perceived impact of a new reform are critical; caution and scepticism are common responses (Hennessy et al., 2005). The modularisation of GCSEs has certainly been greeted with a degree of caution. Whether greater experience of using the modular system would have led to an increase or decline in modular approaches to teaching and assessment we cannot know.

*The issue of controlled assessment*

Controlled assessment replaced coursework when the new GCSE specifications were introduced. Although this change was entirely independent of modularisation, the fact that they coincided seems to have led many teachers to associate one with the other. So, although we had not intended to talk to interviewees about controlled assessment, many of them wanted to talk to us about it. Often, when someone said they did not like the new modular specifications, a little elaboration revealed that what they really did not like was controlled assessment. An examinations officer from a selective, voluntary aided school in London said:

“(…) well actually in our school most of the GCSEs that we do are linear, although some, like Science maybe, it’s modular in the sense that you’ve this Controlled Assessment and that they’re doing different modules at different times of year. I think the main impact has been, in some cases, the workload on the teaching, from the comments that I’ve had from the heads of departments; that’s especially in relation to
The Controlled Assessment. That is the main thing that I've had from people.” Examinations officer, Voluntary Aided School

The high-control writing-up stage of controlled assessment is effectively conducted under examination conditions, albeit with access to research notes. It poses many of the same challenges as external examinations, such as disruption of teaching and the logistics of accommodating and invigilating large groups of pupils. It also poses some problems of its own, such as straining school ICT resources and the difficulty of catering for pupils who are absent for the controlled assessment. An Ofqual report (Ofqual, 2011c) on controlled assessment shows that these concerns are common.

A small minority of schools were overall positive about controlled assessments. One perceived benefit was that pupils who might otherwise not complete coursework assignments produce at least something in the controlled assessment. Another was that controlled assessment places constraints on the time pupils spend on the assessment whereas, before, some pupils would feel pressure to dedicate excessive amounts of time to it.

Overall, the dissatisfaction with controlled assessment was overwhelming and the strength of feeling such that some schools reported considering replacing GCSEs with iGCSEs. This was due mainly to the lack of controlled assessment in iGCSEs, but in part to the more synoptic approach to learning and assessment that iGCSEs offered.

The context of accountability

Research has shown that school accountability measures and the compilation of league tables can affect teachers' behaviour. Schools in England are judged on the proportion of their pupils achieving five GCSEs at grades A*-C (or equivalent) including English and maths. This can lead to the channelling of resources towards pupils at the C/D border and, therefore, away from both the most and the least able pupils (Wilson et al., 2004). The proportion of pupils meeting the criteria for the English Baccalaureate is not a formal accountability measure; rather, it is an indicator of the proportion of pupils in a school who achieved five A*-C in certain “core” subjects. The introduction of a wider range of modular specifications has provided more ways in which schools could attempt to influence both their five A*-C and EBacc statistics. We asked interviewees whether accountability measures and the EBacc influenced how they prioritised entries for resits.

The focus on C/D boundary

There was evidence in some schools that borderline C/D pupils receive a lot of academic support. The examinations officer from a community school in Surrey explained:

“The C/D border. And even the lower Ds, they're getting the papers back to see if exactly did they make a mistake or is it just that's their level? And if they've made a mistake then there's a lot of one-to-one tuition going on there, so, 'This is what you've done wrong, this is how to do it, this is how we can help you.' And the one-to-one tuition is extending, so it's just not concentrating on the Science, it's concentrating on students who need that little extra help. So English and maths are doing a lot of one-to-one, they've got specialist teachers in to do one-to-one tuition. (...) And they often come back and they know it. And it seems to be working because the results are getting better.” Examinations Officer, Community school
This clearly shows how the modular system can be used to provide pupils with the feedback and extra tuition that they need to improve their examination outcomes. There is perhaps a case to answer in terms of the attention that borderline C/D pupils receive and whether it is at the expense of other pupils. However, it is hard to view these efforts as cynical when, as one deputy head pointed out, the C/D boundary – particularly in English and maths – is as important to the candidate as it is to the school. Many job opportunities and progression to A-levels will depend on having “passing grades” – C and above – in five subjects including English and maths. There was certainly no evidence that other pupils would be discouraged or prevented from resitting examinations. In fact, across schools, resitting decisions appeared to be made at the level of individual pupils in the context of their target grades and their chances of improving those grades by resitting.

Prioritisation of subjects

Although not necessarily related to modular assessment, the impact of school accountability measures on the prioritisation of subjects, in terms of the time and resources dedicated to them, raises questions about the relative importance of different areas of the curriculum. One teacher we interviewed expressed strong concerns about the emphasis placed on two or three subjects:

“...certainly the sense in our school is that there is probably an obsession about certain subject areas, and as you might imagine, that obsession is largely about maths, English and science (...) And as a subject for us, that's been quite difficult in the last three or four years, where youngsters have been taken out of our lessons to have extra tuition and extra help in particularly English, science and maths. So I think the school tends to prioritise those things because they are the reported subjects (...)**Teacher, Community School

English and maths are afforded special status in school accountability measures. Whilst literacy and numeracy are indispensable skills, C grades in GCSE English and GCSE Maths do not represent minimum thresholds in these skills. Obsessively pursuing grade C in these subjects is likely to impact on pupils’ learning and attainment in other subjects, so schools need to find an acceptable balance.

Almost certainly, these kinds of “distortions” are a product of school accountability measures; however, it is less clear that these distortions are undesirable, at least in their mildest forms. Most of the schools we interviewed reported focusing on pupils’ individual targets and, where they were influenced by accountability measures, the schools’ interests were aligned with those of the pupils. As the deputy head of a community school in Surrey said:

“I've got all sorts of analyses here, I keep a track on how things are going, because we want to see how the institution's doing; but the emphasis has been very much placed on the individual, with me saying to staff, 'Look, if we look after the individuals and we meet their needs and they are engaged learners, well they'll want to do well anyway, and if they do well, the whole school data will take care of itself', which, you know, for the last five years it has done”. Deputy Head, Community School

English baccalaureate

None of the teachers interviewed expressed any particularly strong feelings for or against the EBacc. As it has only recently been introduced, the EBacc’s currency is uncertain. Not knowing
whether or not employers and, in particular, universities would value it, schools appeared unwilling to give pupils a strong steer on it. In light of interest from pupils and parents, some schools had adjusted their timetables to accommodate pupils who wished to fulfil the criteria for the EBacc, and some reported encouraging pupils who had opted for four eligible subjects to consider opting for a fifth. Some felt that the EBacc could restrict the choice that schools had on offer and deemed the range of subjects contributing to the EBacc as unsuitable for certain pupils.

CONCLUSIONS
The redevelopment of GCSE specifications for 2009 saw the modularisation of all subjects. Although the GCSE criteria had previously permitted this, the modular specifications had, until 2009, been limited to a few subjects, so one or more of the awarding organisations clearly perceived a demand for a fully modular suite and led the way to full modularisation. Many of the teachers interviewed for this study expressed concerns over the negative effects of modular assessment on teaching and learning; however, those with pupils of mixed or lower ability were more likely to see the benefits that modular assessment provides to some pupils. What makes the awarding organisations’ decisions to modularise all subjects somewhat surprising is the likelihood that offering a fully modular suite of GCSEs would probably test the resources – if not the budgets – of most schools to destruction, if our findings are representative. Either this was not picked up by market research – quite possible, if the research targeted subject teachers and heads of department rather than curriculum leaders – or it was decided best to offer all subjects in modular specifications and allow schools to make entries as they saw fit.

Considering the cautious approach to modularisation witnessed in schools and the rules that are in place to limit ‘abuse’ of resit opportunities, the decision to withdraw all modular GCSE specifications seems rather rash and unfounded. There is a good deal of rhetoric about “resit culture” and “dumbing down” associated with modular assessment, but the scant evidence for either is less than compelling. Many of the stresses and strains associated with linear assessment, far from demonstrating rigour, are likely to threaten the validity of GCSE assessments in their role as school leaving certificates. The greater opportunities that modular assessment provides some pupils, in terms of certification of learning, are an argument for preserving a system which has the potential to meet the needs of a wide range of pupils through offering a choice about the timing of assessment.

In the second quarter of 2011, the proportion of young people in England who were not in education, employment, or training (NEET) was at its highest for that quarter since 2006: 16.2% of 16-24 year-olds and 18.4% of 18-24 year-olds (DfE, 2011). Although vocational education, apprenticeships, and employment must play a role in reducing the NEET rates, reforming general qualifications in ways that may discourage young people from continuing to study, or that unfairly limits their achievements, cannot help to improve either the NEET statistics or these people’s prospects.

In June 2012, Ofqual published its consultation on the proposed new arrangements for A levels in England, which includes possible changes to the current modular structure (Ofqual, 2012). As the outcomes of the consultation will be published in November 2012, it remains to be seen whether the government will move to replace the unitised A-levels with linear specifications. Presently, participation in full-time education is compulsory until the age of 16, although it is set to rise to 18 by 2013 (post-16 education may include work-based training). In this context, the role of A-levels as school leaving certificates will become more important than it has ever been. It will be crucial that we enable A-levels to serve the dual purposes of school leaving certificates
and entry requirements for universities, as best they can. Unitised structures can provide such flexibility; linear ones cannot. Given the increasing sophistication of awarding organisations’ examination processing systems, there should be no need to impose upfront all of the rules and structures typically associated with general qualifications. A basic set of rules could be implemented that leads to an A-level qualification for certifying learning, while universities and employers could stipulate their own rules regarding which routes through that qualification they consider valid for their own purposes. A-level certificates and the data provided by awarding organisations to UCAS could contain the information required to judge applicants against these specific criteria.

The reforms to GCSE have been imposed without consultation: the consultation (Ofqual, 2011b) was on the implementation of the reforms, not the reforms themselves. In contrast, the consultation on A-level reform represents a genuine opportunity to tailor the A-level to suit its changing role. Hopefully, this research has helped to show that a modular approach to teaching and assessment has a valid part to play in making general qualifications fair and accessible to all.
REFERENCES


Appendix 1

Modularisation of GCSEs – Interview Schedule

1. What impact has modularisation of GCSEs had on teaching and learning in your school?
   - How do you prepare candidates who are resitting modules? For example, are there revision lessons?
   - Has timetabling around examination series been affected by modularisation?
   - Do you feel that your pupils are able to take full advantage of resit opportunities?
     - Why (not)?

2. Are you teaching and entering pupils for all GCSEs in a modular fashion or do you take a mixed approach?
   - Is the decision taken at senior management, departmental, or teacher level?
   - What factors influence this, e.g. pedagogical, financial, logistical…

3. For any given subject, do you teach and enter all pupils in the same way?
   - How and by whom is this decision made?

4. Do you prioritise entries for resits by subject?
   - Is this influenced by 5 A* - C, i.e. candidates at the D/C boundary?
   - Are the English Baccalaureate subjects prioritised?
   - Is funding a consideration?
   - Who makes these decisions?
5. Do you prioritise entries for resits by candidate?

- Is this influenced by 5 A* - C, i.e. candidates at the D/C boundary?

- Are the English Baccalaureate subjects prioritised?

- Is funding a consideration?

- Who makes these decisions?

6. In your experience, how does the modular GCSE system compare with the modular A-level system?

- Are there any important similarities or differences?

- Is modularity more or less appropriate at GCSE than A-level?

7. Do you think making GCSEs modular was a good or bad thing...

- ...for teachers? Why?

- ...for learners? Why?

- ...administratively? Why?

- ...for exams officers? Why?

- ...for different subjects? Why?

8. What is your reaction to the recent decision to abolish modular GCSEs?