



CAMBRIDGE ASSESSMENT

Discussion paper

Tiering in GCSE – which structure holds most promise?

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1 Tiering in GCSE – which structure holds most promise?

The 2012 policy proposals for revision of GCSE included a removal of tiered papers. This caused outcry in the educational establishment. Voices of concern highlighted the return to a 'dysfunctional two-tier system' (referring to O Level and CSE arrangements of the 1960s and 1970s) and expressed anxiety over departure from 'a single qualification open to all'.

Current GCSE tiered papers consist of Foundation papers, graded G–C, and Higher papers, graded E–A*. They are used in the system to offer exams 'tuned' to the ability of candidates with the apparent advantages that candidates do not sit in front of a paper which includes questions which are far too easy for them, or for other candidates, questions which are well in excess of their ability.

The policy proposal highlighted the potential for tiered papers to limit aspiration – principally through pupils being directed to, and prepared for, the lower tier papers, when, with good teaching and support, they could aim for the higher tier. There are two key things which frequently are omitted from debate on these matters: firstly, a recognition that schools' behaviour constantly adapts when qualifications change in structure or when pressures from accountability undergo subtle shifts, and secondly, systems in other nations seem to make good use of things which we think are disastrous.

This first point – that schools' behaviour constantly adapts when qualifications change in structure, and often adapt in unanticipated ways – is important in interpreting the results of research. Such unintended consequences have shocked qualification reformers. The reformers of the late 1990s felt that modularisation of A Level was an unalloyed good. Some benefits emerged, but unanticipated problems arose as schools adapted to the opportunities present in the structures. So with tiering. It is not inevitable that tiering will limit aspiration. It will only do so if schools, pupils and parents behave in specific ways. And alongside entry to tiered papers, there exist many other decisions which can limit a child's progression in life: being pushed into certain subjects rather than others; taking an excessive number of GCSEs rather than focusing on elevating performance in a more limited range of crucial subjects; the manner in which schools construct learning groups and assign teachers to them. None of these derive directly from the structure of qualifications, but they affect the way qualifications are 'appropriated' by schooling, and the impact they have on equity and attainment.

This paper takes a look at the evidence on tiering, but in drawing conclusions it recognises that the specific effects observed – ceiling and floor effects, entry patterns, etc. – are not necessarily inevitable.

On the second point, international comparisons are helpful. The cry of 'GCSE is for everyone, everyone can enter' gives a picture of a UK system in which everyone is on the same route, with equal chances, up to 16. But the UK is just not that simple. Subject choice, vocational options at 14 (a minimum of 20% of curriculum time now proposed), setting and streaming, 'single science' rather than double or separate sciences etc, all construct implicit 'routes' in the system. And the 'hidden' nature of some of these routes gives rise to

problems which often emerge later, for example options which have been closed regarding Higher Education, without pupils and parents necessarily knowing what they were committing to at an earlier stage. Some would argue that it is essential that we do not have a 'tracked' system before 16. The fact is that we have exactly that, in all sorts of subtle ways. But before we recoil in horror at recognition of the realities of the system, we need to take a look at other nations' arrangements.

Many high-performing systems commit to less differentiated education in Primary than we have. 'Fewer things in greater depth', avoiding pathways, and different rates of progress for different pupils, feature strongly in these systems. But systems such as Hong Kong and Singapore radically 'route' from the age of 11 or 12. By the end of Primary, Singapore attains higher standards and lower 'spread' than England (less difference between pupils – in other words higher equity) – despite greater background social inequality and a higher proportion of ethnic groups than England. In Singapore, around 7% go onto an 'integrated route' where the expectation is that they will skip GCSE and go straight to A Level examinations at the end of upper secondary. At the other end of the ability spectrum, around 10% go onto the N technical route at the end of Primary. Of relevance to the discussion on tiering in GCSE in England, Singapore splits academic qualifications at 12–16 into N and O Levels – with a strong expectation that many of those directed onto the lower level qualification will later work towards attaining the higher qualification.

In Europe, the Netherlands routes at 12 into a general education route and a vocational route. Around 40% enter the latter which provides a similar high-quality core entitlement as the academic route but contextualised into a vocational setting. And there exist opportunities for transfer between the routes. The Netherlands scored exceptionally well in maths in PISA 2003 (a sweep which focused on maths) – and fares significantly better than the UK in respect of high quality and equity in science education at age 15 (OECD 2007 science competences).

What of Finland, the educational star performer? On equity and quality, Finland scores well – hence the huge interest in its system – but does *not* route at the end of Primary. Comprehensive to the end of lower secondary, there exists a vocational route at upper secondary (16–19 phase). Closer examination shows that the high equity and high standards in the Finnish system derive from learning approaches far more akin to those found in the Primary systems of the Far East than in the other nations in Europe: an assumption that effort rather than ability determines outcomes; that all learners may require special support if they are slower or struggling with an element of the curriculum; clarity in objectives; and an emphasis on the quality of teachers and teaching.

These comparisons suggest that a key point for the tiering debate is that it is wrong to over-emphasise the structure of exams as being the most critical factor – the sole thing delivering equity or stimulating inequalities. There are examples of high-performing systems which stream in secondary, and examples of high-performing systems which don't. High quality and high equity derive from many things in a system, not just the shape and content of qualifications.

2 Options

Before looking at the detail given below, it is important to recognise that different subjects may present different issues regarding tiering. Some subjects can differentiate by outcome (eg English, history) and in other subjects highly targeted exam questions may be technically desirable (eg sciences, maths).

The options listed as 2.1, 2.2 and 2.3 are focused on how best to build and structure examination papers. The options labelled 2.4 and 2.5 present different approaches to structuring qualifications, not just the examination papers.

2.1 Retain tiered papers

The advantages of tiered papers lie principally in matching the demands of the assessment more tightly to the presumed ability level of the candidates, lowering the exposure of candidates to questions which are too hard or too easy for them. This can raise the measurement precision of the exams – no time wasted on inappropriate questions – and reduce exam stress. While stress of this kind can be mitigated by giving candidates different exam strategies, the improvement in measurement is a genuine advantage. However, tiered papers – and adapting the curriculum to them – can have distinct problems with some ceiling and floor effects, resulting from candidates being entered for the wrong tier. The extent of this has changed over time, and is in great part determined by the pressures of accountability. There are waves of ‘fashion’ in views about what will optimise school performance outcomes, and a specific focus on optimising the proportion gaining A*–C grades. We have indications – but, regrettably, not substantial research evidence – of the true extent to which pupils’ aspirations are limited by focused preparation, and setting and streaming, linked to specific tiers.

But it is clear that the ‘ceiling effect’ *does* occur – and our analysis suggests that this may affect a more significant number of candidates than previously thought (i.e. who obtain a C grade on a lower tier but have a score which suggests that they should have been entered for the higher tier).

2.2 Use un-tiered papers

The most recent scrutiny of entry and attainment, and the technical performance of examinations, suggests that un-tiered papers may present challenges (pupils need to be prepared, in order to cope with facing questions which are too easy or questions which are too hard) but provide measurement of pupils’ ability which is equally as reliable as that of tiered papers.

2.3 Use a different structure of multiple papers

There are a number of possible models: a variety of papers which allow access to different ranges of grades; a combination of ‘core’ and extension papers; a model where a paper is taken earlier and then the score used to determine, and count towards, a second paper which is higher or lower level, depending on the ability of the pupils as measured in the first paper; tiered papers that do not overlap at key grades that serve as break points for accountability purposes, as well as other variants. The risk here is that, while

measurement fidelity can be enhanced, greater complexity can accommodate (or indeed stimulate) greater variation in behaviour by schools.

Science, for example, requires the acquisition of large amounts of knowledge, with a consequent need to test. Higher tier papers, aimed at those who may wish to progress in the subjects (i.e. current grades A*–D), together with lower tier papers for those needing to know enough science for living (i.e. current grades E–G), might well remove both the potential for gaming and the limiting of aspiration and we would support such a type of tiered paper.

2.4 Diagnostic formative support

There could be retention of tiered papers, or a new set of tailored papers (see 2.3 above) but with entry driven by a more intensive diagnostic testing regime. This could consist of exam-board assessments, or centre-designed assessments approved by examination bodies.

Although falling foul of ‘not more assessment’, this approach could link a continuous process of diagnostic, formative assessment informing entry in final examinations. This would reduce game playing in the system, and the formative assessment could be made available for inspection, allowing the precise nature of the school (in providing learning and in entering) to be scrutinised by the State and by parents. This is less of a policy connected to exam structure and more of a policy aimed to enhance the operation of specific structures.

2.5 Adopt a Level 1 and Level 2 model

This option involves the development of separate qualifications, using a model similar to that developed and used in Singapore. They would be entirely separate qualifications and could differ in form and content as well as standard. At the age of 16, pupils would take Level 1 or 2 depending on that which is most suited to their attainment – those attaining only Level 1 would all drive towards attaining Level 2 at the earliest sensible point for them, post-16. This has the additional advantage that each qualification can be finely designed to address the needs of particular students rather than, as at present, designing one qualification with multiple objectives. This model works well in Singapore, driving higher overall standards than is attained in England. Co-teaching could be explored, for all or some of the learning programme leading to the examinations (annex giving further discussion of the model to be added).

As in Singapore, if pupils only achieve Level 1 by the age of 16, they would be expected to work to attain Level 2 following this. This expectation would be an essential part of arrangements, or limitations on aspiration and attainment could creep into the system. But this model offers promise of a structure with clear steps in progression, and a ‘ladder’ of attainment – encouraging all students to progress to higher levels of qualification, in contrast to tiered papers in a single qualification.

In Mathematics and English, where there is a particularly strong impetus towards effecting a genuine increase in standards of attainment, we feel that the development of a Level 1 / Level 2 model has considerable merit. Far better than aiming at the lower grades, a clear route to Level 2 attainment, for a much larger group of students than currently attains A*–C, would open up.

These all remain options for England. But, as emphasised in the opening discussion, change in exam content and structure is no magic bullet. Many of the problems – and also the assets – of specific exam structures depend on the behaviour around the qualification rather than the inherent characteristics of a specific examination form. These behaviours are heavily determined by factors such as funding, inspection and accountability measures. Qualifications sit inside complex sets of relations and influences. Qualifications reform is only part of effective policy aimed at enhancing equity and attainment. Too often English policy making has depended too extensively on qualifications reform, and thus not realised laudable educational aims.