A level reform: implications for subject uptake

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1 Introduction

1.1 Aims of the research

A levels are currently being reformed, with the changes in the first tranche of subjects being implemented for first teaching from September 2015. The aim of the reforms is to make the qualification more rigorous and to better prepare students for higher education.

The main change being introduced is a return to linear assessment at the end of the two-year course only, as opposed to the structure currently in use where the A level consists of four units[1] assessed separately which can be resat. As part of this change, AS levels will be 'decoupled' from the A level: they will no longer form half of the A level but will become a standalone qualification. In addition, there will be a general reduction in non-exam assessment.

This will be the largest change to A levels since the introduction of Curriculum 2000 and, together with other reforms happening in parallel, is likely to have an impact on subject choice. Universities could also be affected as a result: for example, some courses may not be viable if there are not enough applicants taking appropriate A levels.

The aim of this research is to investigate patterns in AS/A level subject entries over recent years, including the whole period since the introduction of Curriculum 2000, and consider the possible implications for subject choice after 2015, and the supply of candidates to university.

1.2 Details of the research

We have undertaken the research in three strands, and have structured the report accordingly.

- Section 2 reviews the **context** of this reform: the recent policy history of attempts to broaden the A level curriculum, meet HE requirements and ensure quality of 16–19 study, with a particular focus on the reforms currently being implemented, the Advanced Supplementary Levels awarded in the 1980s and 1990s, and the introduction and aftermath of Curriculum 2000.
- Section 3 contains quantitative analysis of **patterns of subject uptake**, using data from the National Pupil Database (NPD), Joint Centre for Qualifications (JCQ) and the Higher Education Funding Council for England (HEFCE) on uptake of A levels and subjects at undergraduate level to investigate the situation in 2014 and trends over time since the late 1990s.
- Section 4 examines **combinations of qualifications** for students taking A levels, using data from the NPD in 2014 to investigate which other qualifications are taken in combination with A levels. This will give an indication of how many of the A level cohort may be affected by reforms to other qualifications, and which A levels in particular are used to support vocational programmes.

Finally we draw conclusions, and make recommendations for future monitoring of the implementation of these reforms.

[1] A levels in some subjects, including sciences and Mathematics, consist of six units.

2 Context

2.1 Introduction

This section covers an outline of the A level reforms that will be implemented from 2015, and other related reforms that are happening in parallel.

We then review two policy initiatives which have some relevance to the current reforms, with the particular emphasis on patterns of subject uptake: the Advanced Supplementary level which was awarded between 1989 and 2001, and the introduction of Curriculum 2000 from 2000 to 2002.

Finally we discuss issues brought about by the reforms and summarise possible implications for uptake patterns after 2015.

2.2 Outline of current A level reforms

The 'Importance of Teaching' white paper (DfE 2010; para 4.47 & 4.48) set out the new government's direction of travel on A level reform: ensuring universities and learned bodies were involved in the development of A levels, exploring linear A levels to provide more synoptic learning, and reducing instances of resitting A level units.

The AS level currently forms half of the A level, and assesses material that students learn in their first year of study. However it is also awarded in its own right, including to students who do not go on to take the whole A level. Hodgson and Spours (2003) have described this as a 'semi-hooked' relationship. The form of the relationship is critical to the way in which any future A level would work, and this was one of the areas consulted on by Ofqual in summer 2012 (Ofqual, 2012). Three options were proposed: removing the AS qualification entirely, making it standalone, or retaining it but reducing resitting opportunities. The analysis of the responses to the consultation (Smith, Mitchell, and Grant, 2012) revealed that retaining the AS in its current form was by far the most popular.

The Secretary of State for Education wrote to Ofqual in January 2013 (Gove, 2013a) to set out his views and give his policy direction:

> The AS is regarded as a valuable qualification, and a useful means of securing breadth within an A level programme. I have concluded that it should be retained, but that its design should be reconsidered in order to establish it as a high quality standalone qualification. I would like the AS level to be as intellectually demanding as an A level, covering half of the content of a full A level and delivered over either one or two years, so that institutions could decide what is best for their students. This approach is a variation on the second option that you presented in your consultation. I recognise that this will be a change from the current system whereby universities can use the AS qualification to inform admission offers, but I note that your impact assessment found that very few universities base offers on AS grades.
>
> (Gove, 2013a)

The Secretary of State's intention was thus something like the previous Advanced Supplementary qualification which was offered from 1989–2001 (see section 2.4): the same standard as the A level, but half the content. However, this position changed over the following two months, following meetings between Ofqual and the DfE. A further letter from the Secretary of State to Ofqual (Gove, 2013b) made no reference to the standard of the AS level save that Ofqual should keep it under review:

> The key educational argument for the AS qualification is that it provides students with the opportunity to study a broad range of subjects, which we know universities value in additional [sic] to a core A level programme. We are keen to preserve this breadth. As A levels become linear from 2015, the AS must be entirely decoupled to become a standalone qualification that is also linear. We should also clarify that an AS is a qualification in its own right, so performance in an AS will not count towards an A level.
>
> (Gove, 2013b)

but Ofqual's reply (Stacey, 2013) stated that "the standard of the new AS will remain broadly as it is now" (that is, the standard which students are expected to achieve after one year of advanced level study). As we shall discuss later, this change is significant.

The content for A levels in each subject has been reviewed by the A Level Content Advisory Board and by a separate panel chaired by Professor Mark E. Smith, and subsequently consulted on by the Department for Education. Variations in the amount of work needed to reform the content and develop specifications have resulted in a staggered start for new specifications depending on subject. As such, for a few years, many students will take a mixture of (legacy) unitised and (new) linear specifications, depending on their subject combinations.

The forthcoming A level reform covers both academic and applied A levels (formerly VCE A levels).

2.2.1 Purpose of A and AS levels

Ofqual has recently defined new objectives of A and AS levels (Ofqual, 2014a). The objectives of A levels are to:

- define and assess achievement of the knowledge, skills and understanding which will be needed by students planning to progress to undergraduate study at a UK higher education establishment, particularly (although not only) in the same subject area;
- set out a robust and internationally comparable post-16 academic course of study to develop that knowledge, skills and understanding;
- permit UK universities to accurately identify the level of attainment of students;
- provide a basis for school and college accountability measures at age 18;
- provide a benchmark of academic ability for employers.

whereas the objectives of the AS levels are:

- to provide evidence of students' achievements in a robust and internationally comparable post-16 course of study that is a sub-set of A level content;
- to enable students to broaden the range of subjects they study.

(Ofqual, 2014a, p.9)

Note that the objectives are very different for the two qualifications, and in particular the AS level does not make any mention of progression to higher education. However, interestingly, in Mathematics and Further Mathematics, the DfE subject criteria make a different case, given the special status of Mathematics as a service subject for other quantitative disciplines.

> AS mathematics, which can be co-taught with the A level as a separate qualification, is a very useful qualification in its own right. It consolidates and develops GCSE level mathematics and supports transition to higher education or employment in any of the many disciplines that make use of quantitative analysis, including those involving calculus.
>
> (DfE, 2014d, para. 4)
>
> AS further mathematics, which can be co-taught with A level further mathematics as a separate qualification and which can be taught alongside AS or A level mathematics, is a very useful

> qualification in its own right. It broadens and reinforces the content of AS and A level mathematics, introduces complex numbers and matrices, and gives students the opportunity to extend their knowledge in applied mathematics and logical reasoning. This breadth and depth of study is very valuable for supporting the transition to degree level work and employment in mathematical disciplines.
>
> (DfE, 2014e, para. 4)

2.2.2 Timeline for reform

The current timelines for each subject (as at 14 May 2015) are reproduced in Table 1, along with the proportion of non-exam assessment in each. In most cases the proportion of coursework is the same in the A and AS levels (to permit co-teaching) but the exceptions (as shown in the table) are the three sciences (where there is a 'practical endorsement' for the A level, denoted as 'p' in the table, but not for the AS level) and geography (where fieldwork forms 20% of the A level assessment but is not assessed in the AS level).

Ofqual has recently announced its decisions on subjects to be reformed, for first teaching in 2017 (Ofqual, 2015a; 2015b). Some subjects (for example, Human Biology and Applied Business) will be discontinued because their content overlaps with other subjects (Ofqual, 2014d).

2.2.3 Models for delivery

Schools and colleges have a variety of options at their disposal for teaching the reformed A and AS levels, because there is no prescription on whether or when the AS level should be taken. For example, it is possible to maintain the existing default model (enter all students for the AS level in four subjects at the end of Year 12, then three A levels in Year 13) with the difference that the AS grades do not count toward the final A level grade; at the other extreme, students could pick three A level subjects at the beginning of Year 12 and take no AS levels; or a hybrid model where students take AS levels only in subjects that they are dropping at the end of Year 12. The Association of Colleges has recently published some guidance for schools and colleges (AoC, 2015) which covers this in more detail and offers some advantages and disadvantages of different models.

Ofqual has acknowledged throughout the reform process that in practice some schools and colleges would want to co-teach students for the A and AS levels, and proposed that "regulations should not prevent the production of co-teachable qualifications, providing the design of a good quality, linear A level is not compromised as a result" (Ofqual, 2013, para. 5.5). To permit co-teachability, Ofqual proposed that all AS assessment in the first group of subjects (for first teaching in 2015) should be by exam (Ofqual, 2013, para. 5.9) except for art and design: this would avoid problems with schools and colleges having to manage different practical and fieldwork assessments for different groups of students, and prevent students having to repeat practical assessments if taking the AS on the way to the A level. However, in the second group of subjects (for first teaching in 2016), non-exam assessment was permitted in the subjects where "practical skills and/or performance are so integral" (Ofqual, 2014c, para. 2.12).

Those subjects with a high proportion of coursework at AS level (in particular) may render co-teaching less attractive. In subjects such as Music, therefore, even those schools and colleges that do opt to co-teach more generally may be reluctant to offer the AS, and may instead concentrate on the A levels. The three sciences are a special case as there will be a separate practical endorsement for A level, requiring students to undertake a minimum of 12 practical activities and demonstrate competence against five criteria. This endorsement will not feature in the AS level, but taking part in practicals is still crucial for AS students to fully appreciate the subject, and indeed to answer questions on practical skills in their written AS examinations, so it should not directly affect co-teachability.

Table 1: Implementation of new specifications

Year (first teaching)	Subject	% non exam	
2015 *(see Ofqual, 2013; 2014a)*	Biology	p	[not AS]
	Chemistry	p	[not AS]
	Physics	p	[not AS]
	Psychology	0%	
	English Language	20%	
	English Literature	20%	
	English Language & Literature	20%	
	History	20%	
	Art & Design	100%	[100% AS]
	Business	0%	
	Computer Science	20%	
	Economics	0%	
	Sociology	0%	
2016 *(see Ofqual, 2014e; 2015c; 2015d)*	Ancient languages	0%	
	Dance	50%	[50% AS]
	Geography	20%	
	MFL (French, German & Spanish)	30%	[30% AS]
	Music	60%	[60% AS]
	Drama and Theatre	60%	[60% AS]
	Religious Studies	0%	
	PE	30%	[30% AS]
2017	Mathematics	0%	
	Further Mathematics	0%	
	Other languages (except French, German & Spanish)	30%	[30% AS]
	Accounting	TBC	
	Ancient History	TBC	
	Archaeology	TBC	
	Classical Civilisation	TBC	
	Creative Writing	TBC	
	Design and Technology	TBC	
	Electronics	TBC	
	Environmental Science	TBC	
	Film Studies	TBC	
	General Studies	TBC	
	Geology	TBC	
	Government and Politics	TBC	
	Health and Social Care	TBC	
	History of Art	TBC	
	ICT	TBC	
	Law	TBC	
	Media Studies	TBC	
	Music Technology	TBC	
	Philosophy	TBC	
	Statistics	TBC	

(Unless otherwise indicated, all AS assessment will be by exam only.)

Given that many schools and colleges are likely to at least consider co-teaching, and mindful of Ofqual's steer on the matter, awarding bodies have designed all their specifications (at the time of writing) so that they can be co-taught, and have offered subject-specific guidance on how this might be done (e.g. OCR, 2014a for English Language). However, delivering the qualification in such a way constrains the order in which certain topics and skills must be taught, which teachers and students may find does not suit them. For example, in English Literature, the full A level involves more comparison between texts than is required at AS level, and although the AS and A level specifications can include texts in common, it may be more natural to consider related texts in sequence rather than cover them once then revisit in the second year. Similar considerations may apply in History, for example, where A level specifications require students to draw more heavily on links between periods.

2.2.4 UCAS tariff

A new UCAS tariff[2] will be implemented for university courses starting in 2017, in which qualifications are allocated to one of four size bands based on the number of guided learning hours, and one of 12 grade bands reflecting the standard. The points are obtained by multiplying the size band by the grade band. As part of this change, the points allocated to an AS will be rebased so that they represent 40% of an A level rather than 50% as at present. Partly as a result of this change, the design of the A level in Wales and Northern Ireland (which are not directly affected by the reforms in England) will be altered to give the marks from AS a 40% weighting in the A level itself.

2.2.5 Reaction

In its inquiry into examinations for 15–19 year olds in England, the House of Commons Education Committee has received an "overwhelming, near-unanimous response from the entire sector saying that actually they don't agree with [AS decoupling]" (House of Commons Education Committee, 2014). Respondents to Ofqual's consultations had also been overwhelmingly against decoupling the AS level (Smith et al, 2012), and in many cases respondents had commented on this even when it was outside the scope of the particular consultation (Ofqual, 2014b). On closer inspection, many of the objections have not been to the decoupling *per se*, but rather to the likely effect of this that fewer schools and colleges would offer a 'standalone' AS level and thus fewer students would choose to take it. The AS was perceived by respondents (Smith et al, 2012) to:

- allow breadth of study and aid informed decision making on progression
- be a valuable qualification in its own right, particularly in STEM subjects and modern foreign languages
- be useful to higher education institutions in selection process as an indicator of post-GCSE achievements
- encourage participation and retention of students at A level, in particular with Mathematics
- enable students and schools to monitor students' progress through their chosen courses
- encourage students to take their year 12 studies seriously
- be useful in developing knowledge and skills needed for A level and subsequently
- support social mobility and equality of opportunity for those who would struggle with a two-year linear programme

In addition, respondents to Ofqual (2014b) stated that many subjects benefited by being the 'fourth choice' of students, and minority subjects feared the loss of numbers that would come from a decline in AS uptake. There has been frequent reference to the AS providing a reality

[2]Further information is available from https://www.ucas.com/advisers/guides-and-resources/tariff-2017.

check or confidence boost for students, for example by the admissions department of the University of Cambridge (Paton and Henry, 2014).

The voice of learners themselves was heard in a joint survey of current and former students of level 3 qualifications carried out by NUS in association with OCR (NUS, 2014; OCR, 2014b). Most respondents were opposed to linear A levels, and 69% said that the main disadvantage of terminal assessment is the lack of feedback from exams during the course. The results revealed that students' subject choices might change under the new system, because the linear A levels were perceived to be more difficult and there would be a tendency for students to move away from STEM subjects. The future of the decoupled AS level looks to be dependent on the response from higher education: 73% of students would only pick a standalone AS level if universities included them in offers, while the popularity of an AS level for its own sake (for enjoyment or interest) varied across POLAR[3] groups.

The response from higher education about the new AS levels has been inconsistent. At the time of writing only 11 institutions have published statements on qualification reform that are listed on UCAS's website.[4] How schools and colleges are supposed to respond to inconsistent advice, to plan their curriculum offer for their whole cohort of students at a time when students are not yet sure which (if any) universities to apply for, is unclear. The common element is that universities are seeking not to penalise applicants for policy decisions on exam entry made by their schools and colleges, as long as this is explained by the institution on the UCAS form. Cambridge's statement encouraging schools and colleges to enter students for AS levels, whether or not they plan to study a full A level in the subject, has received the most publicity (eg Sellgren, 2014) so seems likely to be influential. It concentrates on the predictive validity of the AS assessment, and does not mention breadth at all. King's College London does not set such store by AS grades but will continue to require a 'fourth AS' in medicine and dentistry, but no other programmes, as an additional tool for selecting applicants. University College London, by contrast, currently require a fourth AS in all subjects but have said that this requirement is likely to be dropped.

The first evidence on how schools and colleges might respond to the reforms was provided by a survey undertaken by UCAS (2015). They found that from September 2015 (during the 'mixed economy' of reformed and legacy qualifications) more than half of institutions would be offering AS levels in all reformed subjects, and two thirds would continue to use AS in at least some reformed subjects. However, 16% reported that they definitely would *not* be offering the AS in reformed subjects, primarily independent schools. The picture looks set to change from 2017 when all subjects have been reformed. Understandably there is still considerable uncertainty, but there was a wide range of models that schools and colleges expect to operate after 2017, with the most popular choice (selected by 17% of institutions) being the current system of choosing AS levels in 4 subjects before opting for A levels in 3. In independent schools, 3 full A levels along with an additional qualification such as the Extended Project Qualification was the most popular.

The Labour party had promised to reverse the decoupling decision if it had won the 2015 General Election (Burns, 2013b), by extending the life of the current (unitised) specifications and develop new (recoupled) specifications for first teaching in September 2017[5]; however, Ofqual warned that recoupling would take time and advised 'any incoming government to consider carefully before tinkering under the bonnet' (Stacey, 2015).

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[3]Participation of Local Areas is a classification of areas on the basis of historical participation in higher education.

[4]https://www.ucas.com/advisers/guides-and-resources/qualification-reform

[5] http://www.theguardian.com/education/2015/mar/30/labour-education-policies-schools-tristram-hunt

2.3 Other reforms

There are several other important reforms occurring in parallel with the changes to A levels. Although these might have most impact on vocational qualifications, there are a substantial number of students following a mixed vocational and academic programme (Gill, 2013b) and it is important to bear these in mind.

First of all, the participation age has been raised to 18 (for students born in September 1997 or later), having recently been raised to the end of the academic year in which they turned 17 as a transitional measure (for students born in September 1996 or later). Young people under this age must stay in education or training, which may take the form of full-time education, an apprenticeship or traineeship, or part-time education or training combined with employment, self-employment or volunteering.

The model for 16–19 study has changed towards 'study programmes', a recommendation arising from the Wolf review of vocational education (Wolf, 2011) although it affects all learners including those studying A/AS levels only. These programmes should offer all 16–19 year olds 'breadth, depth and progression into higher education, further study or skilled employment without unduly limiting the options open to them' (DfE, 2012). Funding will switch accordingly from a per-qualification to a per-student basis. As such, schools will have no financial advantage to encourage students to take more qualifications, as long as they have a full time programme[6]. There will also be a net reduction in funding, and sixth form colleges have stated that they have had to drop courses as a result of this and earlier funding cuts (Kewin & Janowski, 2014). Colleges are particularly exposed to the reforms as they cannot cross-subsidise from other areas. Although the move to the new funding model has already taken place (from the 2013/14 academic year), institutions are able to draw on formula protection funding (FPF) until 2015/16 (inclusive) to shield them temporarily from decreases in funding resulting from the change (Education Funding Agency, 2013). As a result of these changes, the default model of A level provision may shift from the current three A levels plus one extra subject at AS, to three A levels only. Another effect of the change in funding is that science A levels no longer attract higher funding than other A levels, despite the attendant costs of facilities and equipment. SCORE have expressed concerns that this will affect provision and therefore uptake (Burns, 2013a).

Additionally, the requirement for schools/colleges to put together a coherent programme for each student may have other effects, for example on the mixing of academic and vocational qualifications. However, in an early evaluation of the 16–19 study programmes, Ofsted (2014) found "little evidence of the transformational 'step change' intended", particularly in schools and academies as opposed to the FE and skills sector, who were better informed.

In order to boost the number of young people taking Mathematics after age 16, the government has launched Core Maths, an umbrella term for a number of different qualifications offered by several awarding organisations, and for which first teaching will begin in 2015. Although its aims are different from AS and A level Mathematics (DfE, 2014a), it may attract some students who would be taking AS level Mathematics under the current system, as well as those who would not otherwise be studying Mathematics at all. Respondents to the DfE's consultation suggested that the distinction between AS and Core Maths, in terms of purpose, content and target students, was not clear, so this was drawn out in greater detail:

> Core Maths qualifications should foster the ability to think mathematically and to apply mathematical techniques to variety of unfamiliar situations, questions and issues with confidence.

[6] In summer 2014 an exception was made for the 'brightest students', who will attract extra funding if they study four or five A levels (or large TechBacc programmes, or the full International Baccalaureate) providing they obtain at least grade B in all their subjects.

> While Core Maths is likely to be particularly valuable for students progressing to higher education courses with a distinct mathematical or statistical element such as psychology, geography, business and management, such qualifications will also be valuable for any student aiming for a career in a professional, creative or technical field. Core Maths qualifications are distinct from A and AS level mathematics. The latter extend students' experience of mathematical techniques significantly, developing advanced analysis of mathematical problems and construction of related arguments and methods of proof. Thus they are oriented in particular towards students wanting to progress into higher level study with a significant mathematical focus as well as being valuable for broader fields of study and work.
>
> (DfE, 2014a)

Thus the distinction is between preparation for university courses with a 'distinct mathematical or statistical element' (Core Maths) and with a 'significant mathematical focus' (AS and A level Mathematics, although the DfE did not attempt to distinguish between them). Examples of areas with a 'significant mathematical focus' had earlier been given (DfE, 2013b) as engineering, economics and the sciences.

A Technical Baccalaureate (TechBacc) has also been introduced, which is a performance tables measure recognising students' achievement in 16–19 vocational education and intended to encourage high quality provision (DfE, 2014b). To be included, students must take a 'Tech Level qualification', a level 3 Mathematics qualification (Core Maths, AS/A level Mathematics, or IB certificates) and an extended project qualification (EPQ). The raising of status of this route may attract some institutions to offer it, and students to consider it, instead of or in addition to A levels. This may also have the effect of increasing uptake for A/AS level Mathematics. The first cohort of students would have started their courses in September 2014 and will complete in 2016.

These changes are occurring in parallel with a new 16–19 accountability framework to be introduced from 2016 (DfE, 2014c), with five headline measures: progress, attainment, retention, destinations, and progress in English and Mathematics (for students without a GCSE pass at A*–C in these subjects). Attainment will be measured separately depending on the type of qualification: in A levels this will be the average grade of students taking A level only programmes, using the 'best 3' A levels taken by each student (as opposed to the total points score currently used). In addition, there will continue to be a measure of the number of students attaining AAB grades, of which at least two must be in facilitating subjects[7].

Looking further ahead, the reforms to GCSEs for first teaching in 2015 may have an effect. Firstly, the accountability measures are being redefined (DfE, 2013c) and the Progress 8 and Attainment 8 measures will provide an incentive for schools to change their subject offer at this level, with possible repercussions for onward progression. Secondly, the content and assessment models are being overhauled, and students' experiences of the new courses may also affect their future subject choices. For example, more demanding GCSEs in some subjects may mean that students are discouraged and less likely to continue certain subjects; alternatively, students may be inspired by the revised content and depth in which the subjects will be covered.

2.4 Advanced Supplementary levels

2.4.1 Genesis, purpose and development

Since the introduction of A levels in the 1950s there have been numerous proposals to broaden the curriculum studied after 16 beyond the typical three subjects. The first which

[7]The facilitating subjects are: Mathematics, Further Mathematics, English Literature, Physics, Biology, Chemistry, Geography, History, languages (classical and modern).

came to fruition was the Advanced Supplementary (AS) level, which was planned and introduced during the 1980s, and implemented for first assessment in 1989. It was set at the same standard as an A level, but covered half the content[8]. The principal objective of the AS level was to "broaden without diluting academic standards the curriculum for A level students" (DES, 1984). However, the Government's aim was only that 95% of all schools and colleges that taught A levels would have introduced at least two AS level courses by 1990. As Kingdon (1991) points out, this was a very modest aim and would not produce any significant broadening unless accompanied by large uptake.

The AS subjects regarded as priorities by higher education were English, Mathematics, modern languages, and Design and Technology, and boards were allocated special funding by government to develop syllabuses in these subjects (along with Welsh and General Studies) (DES, 1986). Students were encouraged to take contrasting AS levels to broaden their studies: for example, English AS along with science A levels, or Mathematics AS along with arts A levels.

The intention was that universities would value two AS levels equally to one A level, so programmes such as 2 A levels + 2 AS levels (the DES preferred model) would be ideal preparation for further study.

2.4.2 Implementation and use

Actually developing a qualification that was the same standard as an A level but with half the content proved difficult. Some subjects were more suited to this than others, with Mathematics and modern foreign languages proving particularly problematic due to the linear way in which they are taught and learnt. The awarding bodies managed to achieve the standard, as evidenced by scrutiny reports (such as SEAC, 1991), but this often resulted in AS levels that required more than half the work of an A level in practice.

The uptake of AS levels among the first cohort proved disappointingly low, and rather different in nature to that originally envisaged. A report by the inspectorate (HMI, 1989) had identified only 6,500 student enrolments on two-year AS courses, but as reported in SEAC (1990), the eventual entry for AS exams was over 30,000. The reason for this discrepancy was that a large proportion of the candidates entering for AS was 17 or under, particularly for General Studies. Partly as a result of the younger candidates being entered for an exam at *A level* standard, the grade distribution was lower than expected. AS levels were also being used as a 'safety net', so candidates who were predicted failure at A level would be entered for AS instead. In modular courses, which were growing in popularity at the time, students sometimes certificated an AS as a step towards the A level (in a foretaste of the Curriculum 2000 model). The result of this was that in figures reported in FEFC (1994), the A–E pass rate was 78% for A level, but 64% for AS; likewise 45% of A level candidates were awarded A–C, but only 32% of AS candidates[9].

The uptake figures were scrutinised on results day each August (eg Weston, 1989b). Unsurprisingly there was a large increase in percentage terms after the first year (Bates, 1990), but the increase soon levelled out, prompting calls for a new approach (MacLeod, 1993). Smithers (1993) pointed out that AS levels were clearly not bringing about more breadth: there were fewer AS entries in total across all subjects in 1992 than A level General Studies entries (the obvious alternative for broadening the curriculum), and indeed the second most popular AS was General Studies itself!

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[8] More precisely, in fact, the AS was meant to occupy *half the teaching and learning time* of an A level, not necessarily exactly half the content or coverage: see Clive Hart's comments in DES (1990), or SEAC (1992).

[9] This gulf persisted until the end of the Advanced Supplementary level: see DfES (2001).

Subject uptake

In terms of subjects, Mathematics, Physics, General Studies and modern languages had dominated initially (SEAC, 1990), and there were particularly large increases in modern languages in 1990. This was consistent with a shift in A level uptake away from sciences and towards arts and languages around this time (Bates, 1991). The 1990 results showed that the grade distribution in modern languages was more similar to the A level than in other subjects, suggesting that these students were using AS as intended. For example, 13.5% of candidates achieved an A in French AS, compared to the overall grade distribution of 8.2% across all AS levels.

HMI (1989) found that students' enthusiasm and commitment were particularly apparent in subjects new to them, such as Psychology, Sociology, Business Studies, Economics and Statistics, suggesting that those students who were able to avail themselves of increased breadth were enjoying it.

Figure 1 shows entry data from JCQ[10], comparing A level & AS level entries by subject from 1991–2000. Figures for 2001, the last year in which the Advanced Supplementary was offered, are not presented here, because the JCQ published them in a different form and because the entry dropped substantially in this year; these are shown later in section 3.4.1. Note that these figures are not restricted to candidates in England, nor by age, and include any retakes.

[10]Available from http://web.archive.org/web/20020417075316/http://www.qca.org.uk/ng/subjects/a_level_results.asp and http://web.archive.org/web/20020613041656/http://www.qca.org.uk/ng/subjects/as_level_results.asp respectively.

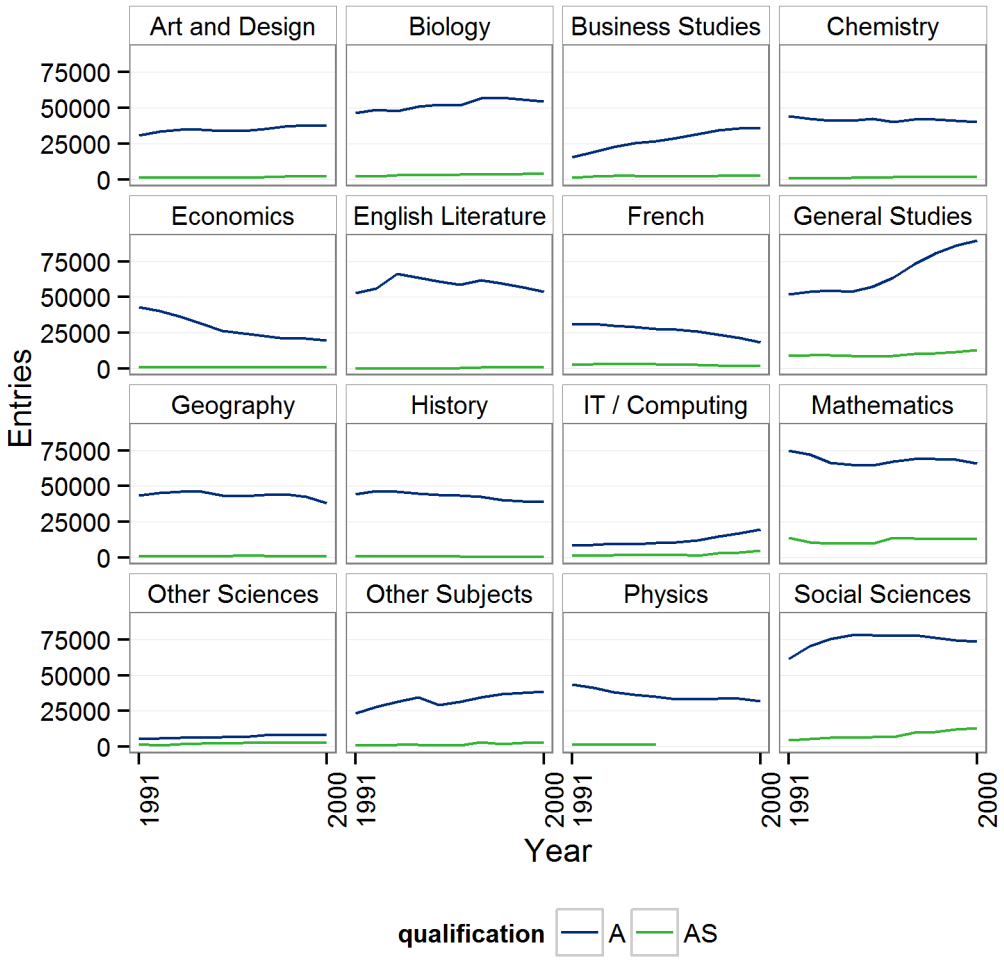

Figure 1: A level and AS level entries 1991–2000

As can be seen, AS entries were modest in comparison to A level entries. Three subjects in particular show an interesting pattern. First, in Mathematics, there was an initial decline then a recovery in the mid-1990s. The initial high level is likely to have been related to schools using the AS as a replacement for the Alternative Ordinary, an intermediate qualification between O and A level which was withdrawn at the same time as the AS was introduced, for students having taken Mathematics O level / GCSE early. Secondly, in General Studies, one of the most popular AS subjects, the AS entry did not see the same dramatic rise in popularity as the A level during the 1990s, suggesting that the AS as a whole was failing (as A level General Studies was fulfilling the role of providing breadth). Thirdly, in Social Sciences, the AS entries nearly trebled over the period at a time when A level entries were falling slightly, suggesting that these subjects were being particularly valued for breadth. Disaggregation of these figures in Table 2 below shows that Psychology and Law were responsible for this growth.

Table 2: Breakdown of Social Studies entries in 1991, 1995, 2000 (source: Joint Centre for General Qualifications annual statistics)

Subject	Number of entries		
	1991	**1995**	**2000**
Archaeology	—	101	138
Community Studies	11	9	13
Law	597	1079	3146
Logic/Philosophy	157	257	251
Political Studies	941	1070	1113
Psychology	1207	2399	5349
Sociology	1602	1788	3149
Personal & Social Education	143	—	—
Total	4658	6703	13159

Programmes

As the aim of the AS was to broaden the curriculum, the best way of understanding its impact is to consider the programmes of study followed by students, and how the AS subject slotted in. Accordingly, HMI and the Further Education Funding Council (FEFC) looked at this issue as part of their remit for inspection of schools and colleges respectively, and a joint project entitled NEEDS (New Examinations, Evaluation and Development in Schools) was set up by the Institute of Education, along with the University of East Anglia and two exam boards (ULSEB and LEAG).

It was apparent from HMI's first study (HMI, 1989) that the uptake of the AS was different to what had been intended. They found that the most common use of AS was as a complementary subject in the same field (for 70% of students that were taking 3 A levels in a particular field, such as sciences, along with 1 AS), with only 30% choosing a contrasting subject (which was the model envisaged by SEAC and DES). However, just over a third of the students had chosen their *A levels* across domains, with an additional AS level, so it was clear that these students were able to achieve breadth without the AS. In their further work (HMI, 1991) they found that AS syllabuses were primarily seen as supporting programmes of students with three A levels, rather than forming an integral part of that programme. If the students found the workload too burdensome, they could safely drop the AS without jeopardising their entry to higher education.

COSSEC[11] reported that AS Mathematics was taken with a particular wide variety of A level subjects (SEAC, 1990), suggesting that in this area it was providing some useful breadth. HMI (1992) followed up their earlier 1989 study by inspecting 12 institutions that had made a substantial commitment to providing AS courses. They found that 'remarkably few' science AS courses were run; most were arts, humanities, social science and language. The most common programmes for the 3A + 1AS model were:

- three sciences at A level with an AS in Mathematics, English or a modern foreign language
- Technology, Physics, Mathematics at A level with an AS in Business, Computing or Electronics

[11]Cambridge, Oxford and Southern Schools Examination Council

- four subjects chosen from modern languages, humanities, arts and social sciences, one of which at AS

whereas for the 2A + 2AS model, the four subjects often spanned social sciences, foreign languages, humanities and arts, with Mathematics or Biology occasionally at AS. They concluded that students were using AS flexibly but not necessarily to broaden significantly their programme of advanced study.

The FEFC (1994) found that a few sixth form colleges had significant AS provision, planned to meet curricular objectives of breadth and balance. However, in most FE colleges there was no AS provision at all, or only in very few subjects. Occasionally, colleges offered AS in combinations with vocational courses, for example Human Biology as part of a vocational course in caring; or a language as part of business studies programmes. At this time General National Vocational Qualifications were being introduced and many colleges saw the potential for combining the AS with Advanced GNVQs (SCAA, 1994).

The NEEDS project found that even where schools had committed to offer and promote AS levels, students' enthusiasm was muted and uptake was low, due to the perceived high workload. However, AS levels in modern foreign languages were mentioned as particularly successful, attributed to the qualitative difference from A level in some boards, with no literature or written component (Higham, 1996).

2.4.3 Summary of issues

Purpose

From the start various bodies were unconvinced of the purpose of AS level, or its role in broadening the sixth form curriculum. Some groups, such as NASUWT (Berliner, 1984), favoured the use of General Studies A level instead, which had a much higher uptake (Smithers, 1993). AS levels were typically seen as an optional extra rather than a necessary part of a broader curriculum (SEAC, 1990).

The AS had been promoted as offering students the opportunity to take complementary or contrasting subjects, though the DES and SEAC were most keen on using contrasting study to bridge the gap between arts and sciences (DES, 1990, papers by Angela Rumbold (Minister) and Clive Hart (SEAC)). However, complementary studies proved more popular with students in practice (HMI, 1992). Arguably, breadth itself was not rejected by students (DES, 1990, report of syndicate on guidance to schools), as a third took a mixture of arts and science *A levels*. Was it therefore necessary or feasible for them to incorporate AS courses in addition?

HMI (1989) believed that there was uncertainty over the students at whom it was aimed, but believed that this would iron itself out when the first sets of results became available and the parity of standards with A level was evident.

AS syllabuses were not specifically designed to act as complementary or contrasting subjects, despite many wishes to the contrary (DES, 1990): the breadth was a function of a student's programme rather than the individual syllabus, although this was often misinterpreted.

'Misuse'

During the early years of AS level there was tension between schools/colleges and DES/SEAC over entry strategies: 17 year old candidates were frequently being entered for the qualification, despite it being at A level standard and designed for 18 year olds; and focusing on the lower ability range. The Joint Matriculation Board reported that this was particularly prevalent in General Studies, where 70–80% of candidates were 17 or younger (SEAC, 1990). Accordingly the grade distribution was lower than with A levels (Broom,

1989b). DES and SEAC perceived this to be a result of misunderstanding of the purpose and design of the AS level, and the Minister went so far as to say that schools and colleges had misused the examination:

> […] clearly some schools and colleges are using AS examinations as a lead into or as a substitute for A level. AS levels are meant to be taken alongside A levels to broaden the range of subjects. They are of the same standard but with half the content. To use them as a stepping stone or safety net after one year is quite the wrong approach and is not helpful to students.
>
> Angela Rumbold, Minister of State for Education & Science, August 1989, reported by Broom (1989a).

HMI (1992) found in inspections that the practice of entering students for AS after one year was 'less than satisfactory' and resulted in poor grades. However, misuse might be putting it a little strongly. Officials did not appear to appreciate the issues facing schools and colleges, or the factors that might lead them to use the qualifications not in the officially approved manner. In many cases colleges were driven by pragmatism (FEFC, 1994): where a student was unable to cope with a full A level course, it seemed reasonable that they should drop down to an AS course (which, even if the standard was the same, should have been half the workload), and likewise if poor grades were predicted at A level, students may have been able to cope better with exam preparation on half the syllabus.

Higham (1996) also found that in some cases schools were fully aware of the intentions behind AS levels, yet still used them as an intermediate qualification at 17+ for several reasons. They felt there was a need for a qualification for students not ready to take a 2 year course (as existed for GNVQs) or who left after one year of a modular A level. They also perceived the need for provision of a general qualification between GCSE and A level for those who wanted further study after GCSEs but did not want to take a vocational route. Over the course of the 1990s, studying an AS as a step towards A level became more popular with the rise in modular A level syllabuses which encompassed the same units.

As well as the perceived misuse of individual AS levels, the *programmes* eventually taken by students on the AS were different from what was intended. The DES's preferred model was for students to take two A levels and replace the third A level with two ASs. However, this was not popular (because students and centres were unwilling to take the risk given attitudes of higher education) and a 3A + 1AS pattern became dominant (DES, 1989).

Design issues

There was a tension in the design of syllabuses (SEAC (1990), 'Chief examiner's perspective') of whether to directly halve the existing A level (and thus facilitate co-teaching of A and AS level classes), or develop a freestanding qualification which might better serve the different aims of AS and the needs of students (for example, AS languages emphasised speaking at the expense of writing). There was a variety of responses from boards (Kingdon, 1991), such as offering common AS/A components, free-standing syllabuses or a mixture, or rethinking the whole A level syllabuses in a modular way.

During the 1980s, an A level 'common core' was agreed between boards in major subjects. Many subject specialists would have preferred AS content to represent the common core, then develop the A level on top of it rather than vice versa (carving the AS material out of the A level), but this was politically unpalatable as the A level was held to be the gold standard and could not therefore be reformed. The amount of the common core to be included in the AS was not mandated: SEAC (1991) reported that in one subject 80%, and in another 50% of the core was used (and deemed appropriate by SEAC). In comments made to the Dearing review, FEDA pointed out that the common core in some subjects was particularly intellectually demanding, abstract and theoretical, so the heavy representation of the core in the AS syllabuses sometimes made them relatively more demanding than the A level (Dearing, 1996).

The premise that depth and breadth could be independent is questionable (Kingdon, 1991); indeed the skills of evaluation and synthesis were (and are) intrinsic to the A level standard, and these require breadth from the candidate. Kingdon (1991, 98–99) used a geometrical argument to illustrate the tensions between depth, breadth and standard of the AS, based on the diagrams used by DES to promote the qualification (in DES, 1986, for example).

Halving the content while keeping the standard proved difficult in linear subjects such as Mathematics and modern languages (SEAC, 1990 'Chief examiner's perspective'). In languages, for example, it was hard to subdivide vocabulary and content.

However, evidence from scrutiny (SEAC, 1991) suggested that the boards were generally successful in ensuring that the AS and A level standard was the same. They did this by, for example, including common items, standardising AS and A level examiners together, or ensuring substantial overlap between markers in the two qualifications.

Workload

There was a widespread view among teachers and students that two AS levels involved more work than just one A level for the same amount of credit, and it made entry to HE harder. This was not just because in practice the AS syllabus typically took more than half the time of the A syllabus to cover, but because studying two different subjects was more demanding in itself (Higham, 1996). Also, due to the lower value of the qualification, if students found themselves overstretched during their A/AS level study they would tend to abandon their AS levels first (SEAC, 1991).

HMI (1992) found that while students were positive about the content of the AS and the comparability of the demand to A level, they reported that the workload was too high. This point was echoed in FEFC's similar inspections of FE colleges (FEFC, 1994).

Co-teaching

There was consensus that having separate classes for A and AS level students was optimal educationally; however there were obvious resource implications for this. As a result, in many cases A level and AS level students in the same subjects were co-taught. HMI (1992) found that this only happened in 30% of cases in the schools they inspected, with separate classes being the norm; for colleges, however, FEFC (1994) found that separate provision for AS teaching was rare, but more likely in sixth form colleges than FE colleges.

The NEEDS project undertook a survey in December 1987, a term into teaching of the first AS levels, when only one tenth of centres had actually implemented AS level courses. At least seven approaches to teaching courses were identified (Kingdon, 1991):

- The most common was vertical divisions of the A level, where AS students attended four of eight (for example) A level periods per week, over the full two years. The success of this method depended on the structure and content of the syllabus.
- Another approach was horizontal divisions: blocks of time (in terms of consecutive days or weeks) when A/AS students worked together, thus a *de facto* modularisation of syllabuses. This proved difficult to implement in practice (especially where schools were attempting to teach the same students two different AS levels in the same period) and led to fragmentation of the AS course, which affected students' attitudes and performance. When NEEDS did a second study in 1988, this method had declined considerably.
- Separate, free-standing AS courses were offered especially by larger schools and colleges, or particular syllabuses where common teaching not appropriate.
- An alternative approach was for students to be co-taught in the first year, with AS students taking their exams at this point, and A level students continuing to the second year. This proved more successful for mathematics, where previously many schools

had used AO (which was at O level standard but covering more content) as a ramp to A level, but was contrary to the spirit of AS which was at full A level standard (which schools/colleges did not necessarily realise).

- Using a common start to A/AS courses before splitting the group in two, to allow students to choose after getting a flavour of the subject.
- Some schools were using AS as an opportunity to develop or maintain the breadth of the curriculum offered, for example where the viability of A level courses was under threat.
- Finally, some schools and colleges came together in consortia to develop their own modular courses.

The success of co-teaching depended on the individual subject and syllabus. Not all A/AS level syllabuses were designed for co-teaching (SCAA, 1994). For example, HMI (1989) found that co-teaching in a particular Art class was not satisfactory because the A level required coursework while the AS did not. Co-teachability was discussed extensively at the AS conference organised by DES (1990), forming the subject of one of the syndicate groups. Participants noted that, from their experience, linear subjects (Mathematics and modern foreign languages) were difficult to co-teach. Elsewhere, co-teaching was reported to be working reasonably well in Geography, but less so in History, for example.

Concern was expressed that co-teaching encouraged the misuse of AS as a stepping stone or a safeguard for less able candidates. Candidates were frequently confused over the status of AS, and its standard, viewing it as less important and easier than A level. If they were co-taught with A level students, the AS tended to be undersold as a result. HMI (1992) also noted the problems of co-ordination in some joint classes:

> AS students felt lost among, or inferior to the A-level students; their homework had to be given in at different times; and not all parts of the work were relevant to them. These problems were not a feature of those classes which had been well planned and where the individual needs of students had been recognised.
>
> (HMI, 1992, 6)

Elsewhere at the DES conference (DES, 1990), the syndicate for exam boards and teachers heard dissatisfaction with co-teaching from teachers and examiners. They believed that syllabuses that were subsets of A level (created with the intention of being co-teachable) did not lead to the most coherent, educationally sound exams and there was potential for discontinuity in syllabus coverage. On a more practical note, co-teaching could lead to groups varying dramatically in size from one lesson to the next, which was undesirable.

However, HMI (1992) found no significant difference in quality on co-taught or standalone classes, and noted that in practice there had been fewer problems with co-teaching than expected. Indeed, they noted some positive effects: having a bigger group stimulated better discussion in psychology classes.

HE recognition

The Standing Committee on University Entrance (SCUE), a predecessor body to UCAS, was involved in the development of the AS level, and publicly endorsed proposals in the promotional literature:

> The Standing Conference on University Entrance reaffirms the universities' support for AS level examinations. Universities strongly believe in the importance of broadening the curriculum and intend to incorporate AS levels into their admissions procedures. For most courses a combination of two A levels and two AS levels will be regarded as equivalent to three A levels.
>
> (DES, 1986)

The UCAS handbook for 1995 stated:

> All universities accept two AS subjects in place of an unspecified third A level subject for entry to most degree courses. AS qualifications are often also accepted in place of named A level subjects. […] No university requires or gives preference to those offering AS qualifications as this penalises students from schools unable to offer the examination.
>
> UCAS handbook 1995, quoted in SCAA (1994)

The possibilities particularly welcomed by SCUE included a complementary programme in the arts field (such as English, a modern foreign language, History and creative arts) and a social science programme spanning arts and sciences. SCUE suggested in 1989 (Weston, 1989a) that AS syllabuses could even be preferable to A level syllabuses to support further study in that area, because they were not overloaded with content which might 'blind the student to principles and concepts which might inform understanding'. With the increased popularity of combined rather than specialised HE courses, and common first year university programmes for related subjects, universities were happy to accept students who had not covered a whole A level's worth of content (Evans, 1990). Indeed, SCUE seemed to be suggesting (Weston 1989a) that schools (and pupils and parents) were the ones dragging their feet.

However, these positive public statements were not always borne out by individual admissions departments and tutors (O'Connor, 1987). Many admissions tutors were unclear as to the nature, purpose and standard of an AS level (Evans, 1990). This problem may have abated had uptake increased and tutors seen more students with the qualification. Many courses, such as medicine and veterinary degrees, required three named A levels (O'Connor, 1987). Additionally, universities did not want to put applicants at a disadvantage because their centre was not able to offer AS levels (Evans, 1990).

As a result, schools, colleges and students were reluctant to commit to the AS level, particularly in the 2A + 2AS route favoured by DES because of the risks. A delegate at the AS conference (DES, 1990) made the point that 2A + 2AS could limit options rather than broaden, as the candidate was left with only two possible subjects to take forward to HE. Choosing the wrong combination of A and AS subjects could therefore be costly.

Where schools and colleges challenged admissions tutors on individual cases where applicants' AS subjects had seemingly been ignored, it seemed that most were prepared to accommodate the AS level within offers (HMI, 1992). Additionally, the growing use of UCAS points for some universities automatically addressed the issue.

Context

The AS qualification was being developed at a similar time as the much more prominent (and successful) GCSE, and with very short timescales (SEAC, 1991). This caused problems for exam boards and centres alike, and syllabuses were still being approved at the point when schools and colleges should have been planning delivery (SEAC, 1990).

The introduction and development of AS levels came against a backdrop of successive rounds of reform in post-16 education, with several consultations about the shape of A levels. The most prominent of these was the Higginson report *Advancing A Levels* (Higginson, 1988). Higginson had been invited to review the shape of A levels and recommended a system in which five 'leaner and tougher' subjects would typically be taken. The proposals were rejected very quickly by the Government. SEAC subsequently consulted on implications of breadth in 1989, recommending that the *AS* level formed the basic unit of study after 16, with the A level content being an optional extra.[12] Despite support from the education sector, again these proposals were rejected by the Government, who accused

[12]Ironically, as noted by Kingdon (1991), this would have made the *A Level* actually supplementary to the AS.

SEAC of going beyond their brief (Meikie, 1990) and it was at this time that ministers, including the Prime Minister, first vowed to defend the 'gold standard' of A level.

Further consultation was launched by SCAA (SEAC's successor body) in 1993 about ways to improve the uptake of AS level (as well as consulting on a starred A grade at A/AS level). This resulted in no changes to the system (Higham, 1996), but a guidance document was produced (SCAA, 1994) including case studies of schools and colleges which had successfully incorporated the AS level. By this time the issue was being overtaken by wider concerns over the post-16 qualifications system, such as parity of esteem between academic and vocational routes, and Sir Ron Dearing was commissioned in 1995 to undertake a review of the whole area. His resulting report (Dearing, 1996) contained a number of proposals, many of which were subsequently implemented in what was to become the Curriculum 2000 framework.

2.4.4 Implications

The pre-2001 and post-2015 AS qualifications are on the face of it similar but there are some important differences, and not all the problems with the Advanced Supplementary levels are relevant to the future system.

Design issues

Many of the issues with the Advanced Supplementary were caused by the tension between keeping the A level standard but on half the teaching and learning time. This made co-teaching difficult, and schools and colleges were clearly trying to use it as an intermediate qualification (either deliberately or not) which it was not designed for. The alignment of the 2016 AS standard with the current system looks to be a wise decision that avoids issues of design of the old AS.

Although the new framework enables schools and colleges to offer AS levels in a variety of ways, they would find it hard in practice to timetable certain configurations in tandem with the current system (as they will have to do in 2016 and 2017) in other subjects. Clearly the easiest system to operate will be a one-year model for AS, and it may well be simpler for schools/colleges to just enter all students for AS in 2016 in all their subjects rather than have to operate two different systems. We will explore the likely numbers of students following a mixed programme during the transitional period in section 3.4.6.

The comprehensive overhaul of content and assessment, via a series of consultations by the DfE and Ofqual and with university input through ALCAB, backed up with development by awarding organisations and a rigorous process of re-accreditation, should leave the AS and A level specifications in better shape than the patchwork of new/legacy A level syllabuses in use towards the end of the 1980s, with some Advanced Supplementary syllabuses being hewn out of the corresponding A level, and others redeveloped from scratch. Maintaining the option of co-teachability has been emphasised throughout the development period by Ofqual, and the boards have responded by enabling and promoting this possibility.

Purpose

In recent years, discussion on post-16 curricular breadth has been more muted than in the 1980s and 1990s, perhaps because the modest increase in breadth through Curriculum 2000 has partially solved the problem, and hence the government's then preference for contrasting rather than complementary subjects seems rather unrealistic now, especially given the common recent pattern of using a 'fourth AS' in order to progressively narrow down subject choice (to be discussed in section 2.5). The substantial decline in popularity of modern foreign language study means that a language AS to contrast with a main programme of scientific or business related subjects is less likely. However, the use of Mathematics Advanced Supplementary as either a complementary or contrasting subject, depending on the rest of the student's programme, the relatively high uptake in the 1990s

and recent growth suggests a particular role for Mathematics AS from 2017. Indeed, the government have stated as much in the content specifications (DfE, 2014d).

Co-teaching

There was general agreement that separate classes for the Advanced Supplementary and A levels was better educationally, but often not a practical use of resources. Co-teaching should be less problematic for the post-2015 A and AS levels, because of the difference in standard between the two qualifications, but this is likeliest to be a one-year 'horizontal' division, rather different to the Advanced Supplementary.

Unless the subject choice model operated by a school/college works as in Curriculum 2000 (with everyone entered for the AS, and final progression to full A level courses determined after results are known), there will be obvious disruption to co-taught classes with some students preparing for assessment, and indeed actually being assessed, while others are not. However, if the system operates as now, then clearly no teaching and learning time will have been freed up (one of the government's objectives for the reform). In addition to these practical considerations, there could be more subtle effects of co-teaching such as perceptions of inferior status or ability of 'AS only' students (HMI, 1992), and a feeling among A level students that they are being asked to undertake AS assessments which have no subsequent value for themselves, but are a tool of convenience for the school (to be able to offer co-teaching) and universities (to provide an admissions test).

HE attitude

As with the Advanced Supplementary levels, the response from HE about the new AS levels has been inconsistent (as discussed in section 2.2.5) although schools and colleges are looking to universities to inform their decisions about what qualifications to offer. In the light of its survey of schools and colleges, UCAS has advised universities to make their position clear. It seems likely that universities will not discriminate against candidates who were unable to take AS levels because of centre policy. The unfamiliarity with the Advanced Supplementary level reported in the 1990s will not apply, although the co-existence of the legacy and reformed qualifications in England in different subjects for a few years, let alone the Welsh and Northern Irish versions, may well cause confusion among university admissions staff.

2.5 Curriculum 2000

In April 1995, Sir Ron Dearing was commissioned 'to consider and advise the Secretaries of State […] on ways to strengthen, consolidate and improve the framework of 16–19 qualifications'. He was asked whether there was scope for greater coherence and breadth of study post-16 without compromising standards (particularly in A levels). The resulting report (Dearing, 1996) put forward a more coherent system, unifying academic and vocational qualifications under a common framework which allowed more mixed programmes.

Dearing's recommendations were largely adopted and subsequently implemented by the incoming Labour government in 1997 (Hodgson and Spours, 2003). First teaching of the reformed system, which became known as Curriculum 2000, was from September 2000. The underlying purpose was "to address undue narrowness and lack of flexibility in the post-16 curriculum" (QCA, 1999). As well as more integration between academic and vocational qualifications, and the introduction of key skills, the reforms introduced the Advanced Subsidiary (AS) Level as recommended by Dearing, designed to "support progression and encourage breadth in post-16 programmes" (QCA, 1999).

In this section we will focus on the effect of Curriculum 2000 on A levels, where Dearing proposed a 'reformulated AS' (Advanced Subsidiary) that would follow a horizontal rather than vertical model; that is, taken by all students on the way to A level. The then recent development of modular A levels had led to difficulties in skills-based subjects (such as

Music and modern foreign languages) where the modules were all supposed to be at the same standard, and Dearing proposed that the new AS standard would be the "breadth and depth appropriate for one year's study post-GCSE" (Dearing, 1995, para. 14.11). The new AS would serve the needs of five groups:

- those who wish to broaden their post-16 course (the primary purpose)
- those who, initially at least, are only prepared to commit themselves only to one more year in full time education
- those who are not yet sure about the areas in which they wish to specialise and who would like to defer their decision until later
- those learners considered not yet able, mature or confident enough to cope with a full A level course, and those who have chosen to take only a short course in the GCSE and for whom therefore the AS would represent a substantial advance
- adults returning to study (full or part-time) for whom a full A-level may, at first, seem a difficult and distant goal.

(Dearing, 1996, para. 11.13)

These were large reforms, introduced quickly, which led to much controversy and turbulence especially around A level standards and public perception, culminating in two 'summer crises' in 2001 and 2002 (Hodgson and Spours, 2003). Much of this is out of scope for this report, but Richardson (2007) gives a political overview. A welcome side-effect of this, from our perspective, is that there was lots of monitoring of the change, both planned and reactive. Firstly, QCA and UCAS carried out a series of surveys of schools and colleges (the results of which were published separately, but are summarised by QCA research team (2002)); separately, the Institution of Education and Nuffield carried out extensive research on institutional responses to the reforms (Hodgson and Spours, 2003); and Ofsted undertook reviews (Ofsted, 2001; 2003). As issues were discovered, the Secretary of State asked first the QCA (2001a; 2001b; 2003), then Mike Tomlinson, former Chief Inspector of Schools (Tomlinson, 2002a; 2002b) to carry out reviews. Finally the House of Commons Education and Skills Committee (2003) carried out an inquiry.

2.5.1 Issues

The principles behind the reforms were supported overwhelmingly by schools and colleges (QCA, 2001a) but there were a number of practical issues.

Quantity and dominance of assessment

Curriculum 2000 involved a great deal of formal assessment: a typical programme of 4 AS levels and Key Skills, followed by 3 A2 subjects would involve 30 hours of exams plus coursework (QCA 2001a). Part of this was due to initial requirements for assessment and certification of Key Skills, which were quickly relaxed (QCA, 2001b), and an impractical exam timetable for the first June AS exams in 2001 with 600 AS papers slotted into 3 weeks (QCA, 2001a) resulting in excessive burdens for candidates in one day and frequent overnight supervision. Part of the reason for this was the unpredictability of candidates' subject choices and combinations. The timetabling issue was resolved in the short term (QCA, 2001b) by making practical adjustments, and the assessment burden was later eased by the reduction of the number of units in each A level from six to four with effect from 2008 (in most subjects).

There were reports of a "strong, deleterious interaction between assessment and learning" (QCA research team, 2002), with teachers taking a rushed, short-term approach (QCA, 2001a) in the AS year to cover the material in time for the exams, although this did seem to improve for A2 (QCA, 2001b). Teachers were following the specifications in precise detail for the first year (and thus 'teaching to the test') as they did not feel confident about where the standard of the AS was (QCA research team, 2002). There was a reduction in teaching time

per subject, because the 'fourth AS' had to be squeezed into the curriculum, and the AS assessments themselves had to be accommodated (QCA research team, 2002; Ofsted, 2003). The summer term of Year 12 became something of a dead zone, as students were exhausted after their exams and did not necessarily know which subjects they were pursuing to A2. The larger group sizes at AS, containing a wider range of ability and commitment, were also seen as negative (Ofsted, 2003; QCA research team, 2002). These problems had a knock-on effect on students, which together with a large workload led to stress and exhaustion. Understandably, students were prioritising subjects in which they had exams (QCA research team, 2002) which coupled with the assessments themselves led to disruption to other subjects. The 'assessment focus' gave students less time to develop intellectually, read around topics and experiment with ideas (QCA research team, 2002). However, a counterargument to this (House of Commons Education and Skills Committee, 2003) is that the external assessment had the beneficial effect of concentrating students' minds in Year 12 and giving them a sense of purpose.

In the majority of schools surveyed, Ofsted (2003) found that the period up to autumn half term of Year 12 was treated as introductory, with some schools allowing students to try a range of subjects in the first two weeks before making their final choice. However, they were reluctant to allow students to change after this period because the weight of AS assessment made it almost impossible to switch.

Inability to plan

Schools and colleges found it difficult to plan for the first year (QCA research team, 2002) because of the uncertainty built into the system: because students were able to drop subjects after the first year, timetables for A2 had to be made before students knew their AS results. There were viability issues with smaller A2 class sizes in some institutions (QCA research team, 2002) but Ofsted (2003) found that retention of minority subjects such as languages was often possible due to increased numbers more generally (effectively cross-subsidy).

Cash-in

There were complicated rules governing resits and the certification or 'cash-in' of qualifications (QCA 2001b; 2002). It was not necessary for candidates to cash in their AS level at the end of Year 12, and even if they had done so they could still resit one or more AS units to improve their eventual A level grade. Baird, Ebner, and Pinot de Moira (2003) reported that approximately a fifth of AQA A level candidates had not certificated an AS in the subject. There had been conflicting messages from universities about putting AS grades on application forms. QCA had advised UCAS it could make no assumptions based on whether or not a candidate had declared AS grades. There were potential perverse incentives for candidates too, as explained by Pinot de Moira (2002), with regard to the respective UCAS points obtained from cashing in the same units as an A level or an AS level.

Tomlinson (2002a; para. 35–38) found the rules did give robust, accurate grades which reflected students' overall performance, but were too complicated for professional and public understanding and confidence. As a result, Tomlinson (2002a) recommended (para. 42) that AS and A2 should be assessed, graded & awarded separately, and thus become distinct, separate qualifications. He was to return to this recommendation in his later proposals for an overarching diploma (Tomlinson, 2004), which were not accepted by the government.

Drop-outs

Increased retention was one of the aims of Curriculum 2000, and QCA (2001a) found that retention within the AS year did improve. Ofsted (2003) reported that approximately a quarter of Year 12 students changed or dropped one of their AS subjects because they were

not prepared for the demands or challenge of taking four AS subjects. Dropping of individual subjects after the AS and not pursuing them to A level (often referred to as 'drop-down') was found to be higher than dropping of A level subjects in previous years, but QCA pointed out that this should be seen in the context of the increased number of subjects taken.

One issue which was little predicted in advance (somewhat naively, in retrospect) was that the AS level would serve as a filter for the A2, and that students would tend to drop the subjects in which they had done least well. Pinot de Moira (2002) found a marked difference between the AS grade distribution for the candidates who were continuing, and those who did not continue in the subject. This was backed up by analysis by QCA (2003) of candidate performance in five subjects, which found that candidates tended to proceed to A2 in subjects in which they achieved higher AS grades.

Baird et al (2003) found that popular reasons for students dropping a subject were that they had been planning to do so, or they had received an unexpectedly poor grade at AS. The direction of causality between grades and dropping a subject is not necessarily clear-cut: for example, students planning to drop a particular subject would probably prioritise other subjects when preparing for their AS level exams, thereby obtaining a worse grade.

Standards

The standard of the reformed A levels became a key political issue and the subject of inquiries by Tomlinson (2002a) and House of Commons Education and Skills Committee (2003). The initial statement of the standard of the AS by Dearing (1996) was "The new AS should be graded on an A–E scale like the full A level, with the top grade defined as the standard attained by a student who, with one year's further study, would be expected to achieve a grade A in the full A level; the other grades would relate to the A level standard in the same way". However, Tomlinson (2002b) found that there was no consistent view among awarding bodies, examiners and teachers about the relative standards of AS, A2 and the overall A level. The standard of AS in each subject was crucial for progression: too high and progression from GCSE would be affected; too low and there would be an impact on the AS–A2 step (QCA research team, 2002). As a result of initial difficulties, QCA had published a clarification (QCA, 2002). Scrutiny reports found, however, that the initial award of AS was appropriate in 2001 (QCA, 2001b) with a few isolated exceptions.

One point that had not been fully appreciated was that students were now able to exercise 'informed choice' (Pinot de Moira, 2002) during the course of their studies: deciding which subject to drop on the basis of the AS results and often dropping their weakest subject. Therefore even if *standards* in a particular subject were to remain the same, the eventual A level grade distribution could increase dramatically, because the weaker students had effectively withdrawn themselves (Tomlinson, 2002b, para. 12).

The vocational (VCE) A level introduced at the same time, as a replacement for the Advanced GNVQ had different standards to the GCE as there was no AS or A2, so the standard was the same throughout and there was no 'staging post' (QCA, 2001b). This was subsequently reformed to match the GCE for first teaching in September 2005, and these qualifications were renamed Applied A levels.

There were particular issues with the standard of Mathematics AS level, which was set particularly high and led to a large proportion of students failing the AS level and subsequently dropping the subject (QCA, 2001b). This had wide ramifications and we shall discuss this in section 2.6.1.

Response from HE

During the early stages of Curriculum 2000, schools and colleges had a negative impression of higher education's response to the reforms. Most centres did not believe that universities

recognised the increased breadth of applicants' programmes (QCA, 2003), except for those 'recruiting' institutions that used UCAS points (which automatically reward AS), as the more prestigious 'selecting' institutions were still focused on three A level subjects. The House of Commons Education and Skills Committee (2003) also heard evidence that HE was showing no acceptance of the AS/A2 framework, and discouraged diversity of curriculum.

There was inconsistent advice given to candidates on whether they should cash in (and therefore report on their UCAS form) their AS level grades. UCAS and QCA looked into the relationship between whether candidates certificated their AS levels and the number of UCAS offers they received (QCA, 2003), and concluded there was no clear advantage for certification, or disadvantage for not certificating. HE institutions were reported not to be influenced by whether an applicant had certificated, and some tutors said they were instructed not to read anything into it. QCA was broadly happy with the status quo and saw no need for change, although other organisations recommended the choice was abolished for simplicity. The choice was effectively removed for students in state-funded schools and colleges in 2011, when certificating AS levels taken became a condition of funding. However, clearly this did not affect independent schools, who do not receive the funding anyway, and there may therefore still be substantial numbers of students at these schools who have not certificated their AS levels.

Breadth

Increased breadth was a key aim of the Curriculum 2000 reforms but opinions varied about the interpretation (QCA research team, 2002). On the one hand, the majority of students were increasing their breadth of study by taking more GCE/VCE subjects, but there were also widespread reports of students decreasing breadth by reducing participation in wider enrichment activities. One quote from a school/college in QCA (2002) gives a flavour: "An attempt to broaden the curriculum offer is having the ironic result of students not having time for activities which have traditionally given them breadth." In a survey of schools and colleges, QCA research team (2002) found that the offer of curriculum enrichment activities had decreased in 31% of centres, and uptake in 38%. Hodgson and Spours (2003, p. 79) summarised the overall effect of Curriculum 2000 as "quantitative gains but qualitative losses".

The prevailing programme taken by A level students became to take four AS levels in Year 12, followed by three subjects at A2. This 'fourth AS' was the main effect of the Curriculum 2000 developments (QCA research team, 2002). However, there was a reduction in the number of students taking four full A levels (QCA, 2003). The majority of students regarded the fourth AS as a substantial benefit (QCA, 2001a; Ofsted, 2003), endorsed greater breadth and valued the increased choice. Ofsted (2003) noted evidence of a broader range of subjects on offer, especially in colleges, but sounded a warning note: "for most young people, the added breadth resulting from the new arrangements has been, at best, modest". QCA also described the changes and their success as modest (QCA, 2003). Essentially, merely offering new subjects and qualifications did not necessarily have an effect on the breadth of a programme studied by an individual student (QCA research team, 2002). Bell, Malacova, and Shannon (2003) found that the fourth AS did led to increased breadth compared to previous patterns of uptake, but that mixed programmes in the AS year were not generally carried through to A2. In fact, there had been a shift towards a more specialist programme in the first A2 year (2001/2) than in the previous linear A levels, possibly because candidates could select their best subjects after AS results (Bell et al, 2003).

General Studies (a popular source of breadth before Curriculum 2000) continued to be used, including as a vehicle for key skills, although less so than previously as some centres had abandoned it in favour of a fourth AS (QCA research team, 2002). Hodgson and Spours (2003) reported that the new 'broadening' AS level in Critical Thinking was well-regarded by teachers and learners.

There was a little more mixing of general and vocational A levels (QCA, 2003), than the previous equivalents, but this was mainly through students with a predominantly vocational programme taking a GCE A level than vice versa (QCA research team, 2002). Hodgson and Spours (2003) reported that only a minority of learners in FE colleges were taking four subjects (where mixing was intrinsically more likely), those taking AVCEs tending to take 12-unit courses (double A levels). There was more mixing of study in sixth forms of lower attaining comprehensives: Advanced GNVQs had previously been popular but the progression potential of AS was attractive.

Selection of A level subjects was primarily based on student choice, but this was not necessarily held to be a good thing (QCA research team, 2002): it was generally pragmatically related to students' own interests and prior attainment, rather than informed by a coherent centre policy on breadth and depth. Centres reported that guidance was sometimes offered but ultimately students would win out (as they could instead study at another institution). Few schools had policies requiring contrasting subjects (Ofsted, 2003, para. 47), and students aiming for specific HE courses would take the combination of AS subjects that they thought would be most advantageous for entry, so for example prospective applicants to medicine courses would often take three sciences and Mathematics. Thus there was little broadening of the curriculum in practice.

2.5.2 Subject trends

In an initial investigation of the effect of uptake in individual subjects, Baird et al (2003) found that the most dramatic change was that Psychology A level entries rose from 31000 in 2001 to 41000 in 2003. Looking in terms of percentage points of the whole entry, there were changes of over 1 percentage point in only four subjects: Psychology (+1.4pp), General Studies (-3.9pp), Mathematics (-1.3pp) and Media/Film/TV Studies (+1.1pp). Most of the increase happened in the first year of Curriculum 2000 (2002) but for Psychology, half the increase occurred in 2002 and half in 2003. Baird et al (2003) concluded that "entries by subject had changed little since the introduction of Curriculum 2000, but it may be that over time there will be trends of increasing or decreasing entries for particular subjects".

Bell et al (2003; 2005) found a decline from 2001 to 2002 in the overall numbers of candidates obtaining A level results, and also a reduction in the numbers of A levels per candidate. However, much of the decline in numbers of subjects taken was a result of fewer candidates taking General Studies, presumably being exposed to breadth instead through a fourth AS, Key Skills and elsewhere. Bell et al (2003) also reported a decline in Mathematics and modern language A levels from 2001 to 2002. For languages, there was no change in the number of candidates studying two or more, but a decrease in those taking only one. There was also a decline in the percentage of candidates taking at least three A levels in science areas; however, this could have been as a result of the particular issues with Mathematics. Ofsted (2003) found that some institutions were setting higher entry requirements for certain subjects (Mathematics, modern foreign languages, and sciences) in the light of the first year of AS results, which may also have affected uptake.

Looking more broadly at the combinations of subjects studied by students, Bell et al (2003) found that female students were more likely to specialise (that is, take all three subjects in the same area) than males, and there was a gender split in the area of specialism. For arts and languages, and social sciences and humanities, candidates with low prior attainment were more likely to specialise, but the reverse was true for sciences. In 2002, 35% of candidates were specialists on the basis of their A level subjects, but this figure dropped to 21% when AS subjects were included, so AS levels did produce a slight broadening of the curriculum.

2.5.3 Implications

As part of the review of Curriculum 2000, QCA recommended that future development of new qualifications should be carried out carefully with at least a full calendar year between the availability of new specifications and their implementation in schools and colleges, to ensure the right staff, training and resources are available in time (QCA, 2001b, para. 6.7 & 6.8). However in the current reform this has not happened; although some specifications for first teaching in 2015 were approved in summer 2014, accreditation continued through the autumn term, and some specifications have been approved as recently as March 2015[13], leaving schools and colleges little time to evaluate and select specifications and prepare for teaching. Part of the problem is a political desire to deliver reforms rapidly so that the effects can be felt.

Although the post-2015 A level system is not such a break with the past as Curriculum 2000, being in some sense a return to the linear system before 2000, there will still be major issues to consider, such as whether to offer the AS, and whether and how to undertake co-teaching. Thus schools and colleges have been faced with uncertainties about planning. The chief causes are political uncertainty (because the Labour party had promised to reverse the decoupling of AS and A level) which will have abated following the result of the General Election, and how to manage the transitional period when some subjects are linear and others are still modular. Schools and colleges will need to be aware of how this appeals to prospective A level students, as there is a risk that they vote with their feet and attend an institution with a different exam entry policy.

The reduction of assessment and the AS exams may well have a positive effect on the teaching and learning experience in both Years 12 and 13, with less pressure initially, more time and reduced 'teaching to the test'; indeed, this is one of the government's stated aims for the reforms. Importantly, however, this is conditional on the school not entering students for AS levels if they are continuing to the A level. During the transitional period from 2015 this is in question, as many students will be taking a mixed programme of reformed (linear) and legacy (modular) A levels. Thus assessment from the legacy subjects may well overspill into the new linear subjects, even if students are not being entered for AS levels in the reformed specifications: firstly in practical terms, as revision and the actual assessment would eat into teaching and learning time; and secondly the finding by QCA research team (2002) that students understandably prioritised subjects in which they were taking exams will be pertinent. Conversely, if schools and colleges enter students for AS levels in all their subjects during the transitional period, this may demotivate students further if they feel they are working hard for AS assessments which no longer count towards their final A level grade. Accordingly there may be little benefit felt until all subjects are linear.

The difficulties over A level standards and pass rates experienced in 2001/2 could well repeat themselves in reverse from August 2017 onwards, if the default model reverts to three full A levels only. If students are no longer able to exercise an informed choice after a year to drop a subject in which they performed less well, the overall A level grade distribution would go down even if the standard has not changed. This effect will probably be more subtle than the abruptness of the Curriculum 2000 change, because not all schools and colleges will be responding in the same way, or at the same speed, to the reforms, and this change will occur at different times in different subjects. In addition, restrictions on resit opportunities have already come into force.

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[13] As shown by the 'page history' option on https://www.gov.uk/government/publications/new-gcses-as-and-a-levels-accredited-to-be-taught-from-2015, WJEC Eduqas: AS and A level psychology were reported as accredited on 17 April 2015.

2.6 Issues in specific subjects since Curriculum 2000

This section explores uptake in two subject areas where there have been interesting features since the implementation of Curriculum 2000.

2.6.1 Mathematics

During the initial implementation of Curriculum 2000, there were serious concerns about the new Mathematics AS level being too difficult (QCA, 2001b). The new requirements had come (on Dearing's recommendation) from a report by SCAA and Ofsted 'Standards in Public Examinations 1975–1995', which embodied more rigour and an independent approach to problem-solving. Mathematics was already regarded (including by Dearing) as more difficult than other subjects, but this change came at universities' behest.

The eventual outcome was that whereas the 2001 pass rate in many other AS subjects was over 90%, for Mathematics it was just 70%. This led to many students dropping the subject, and low uptake of the full A-level in Mathematics in 2002 – only 77% of the 1999 level (Matthews and Pepper, 2007, Appendix B). This had a lasting effect on uptake of Mathematics AS, from which it took several years to recover. Fears were expressed about the recruitment to university courses in Mathematics and other subjects, and an eventual shortage of Mathematics teachers (QCA, 2001b). For these reasons, in his inquiry into post-14 Mathematics Education, Adrian Smith referred to the Curriculum 2000 reforms as a "disaster for mathematics" (Smith, 2004, para. 0.31).

New subject criteria and specifications were subsequently introduced (for which the first A level was awarded in 2006) which used a spiral curriculum approach: a topic would be introduced at AS and then given a more sophisticated treatment at A2. The uptake of Mathematics A level returned to pre-Curriculum 2000 levels by 2007 (Matthews and Pepper, 2007), with an improved transition from GCSE to AS and better retention from AS to A2.

QCA carried out a full evaluation in participation in Mathematics A level (Matthews and Pepper 2006; 2007). They found that participation in Mathematics A level had not been widened – it was still an exclusive subject – and that recruitment by schools and colleges was targeted at the highest achievers only. This only heightened once the first Curriculum 2000 cohort had received their results (Matthews and Pepper, 2007), which were disappointing in Mathematics. The grade distribution for Mathematics A level had long been different from other subjects (grade A being the modal grade), and as Smith (2004, para. 4.37) reports, for other than the most able, Mathematics was seen (by schools, colleges and students) as higher risk. So there was a high initial selection, but this was compounded by a high 'cull' between AS and A2: there was a greater disparity between AS & A level cohorts' GCSE points scores than for any other subjects. AS was therefore serving as a 'stepping off point' for the less able, which did not happen so much in other subjects (Matthews and Pepper, 2007).

Mathematics A level is subject to particular pressure because of its dual function, and what Matthews and Pepper (2007) called the 'Smith paradox' (referring to apparent inconsistencies between recommendations of Smith (2004)): A level needs to be designed simultaneously for able mathematicians to progress, and for those who need Mathematics as an underpinning for other areas.

There is also a perception of a particular distinction in Mathematics between high flyers – those with natural flair for the subject, and those who try or 'slog' through the course. Such a perception is unlikely to be helpful to achievement in the cohort as a whole, and will turn students off. Matthews and Pepper (2007) found that the high achievers in Mathematics classes may discourage the less able, because they are left behind by teaching methods geared to the most able. They suggested that the lower achievers dropped out through self-

selection because they did not feel sufficiently well supported, rather than because they were actively persuaded to drop the subject by teachers.

Matthews and Pepper (2007) found some evidence to support their 'comfort/utility hypothesis' that reasons for studying Mathematics varied between boys and girls: boys were much more likely to do so because of university/career plans, while girls cited previous success in the subject, then university/career plans, then enjoyment of the subject. The implication of their hypothesis is that uptake of Mathematics among girls is more likely to be vulnerable to issues such as the excessively difficult specification introduced in 2000, as they place more emphasis on being able to cope with the demands of the subject.

Bell and Emery (2006) pointed out that the decline in A-level mathematicians was not as severe as reported at the time (from 85000 in 1989 to 66000 in 2001 and 52000 in 2004). They emphasised the importance of considering the fluctuation of the underlying cohort over such a long period, and also the grade distribution: when looking from the point of view of higher education and employers, what counts is the number of passes, rather than the number of entrants, and the proportion of failures was higher in 1989. Bell and Emery (2006) did acknowledge that there was a decline in A level Mathematics passes associated with Curriculum 2000, but the AS entry was high, so the reforms had been successful in getting more students to study mathematics after GCSE. They put forward the possible explanation that there were several thousand candidates prior to 2002 who *would have dropped Mathematics given the option* (and that they would not have opted for numerate degrees).

Implications

The turbulence in Mathematics A level take up from 2001 onwards has shown the risks inherent in reforming qualification content and standards, and that maintaining progression is crucial. As content and assessment in both GCSE and A/AS level are being thoroughly overhauled from 2015 there could be effects due to either side. In particular, making GCSE harder may affect onward progression in a subject. On the other hand, the fact that they are being considered together, and there has been substantial input from subject experts, may be advantageous. For example, Mathematics A/AS level has been delayed to 2017 first teaching because it relies on new content being taught in GCSE Mathematics (first teaching from 2015).

The A Level Content Advisory Board (ALCAB) suggested that the reforms have 'particularly difficult consequences for mathematics', making choosing Mathematics a higher risk option than now, and particularly high given the sequential nature of Mathematics. They were also fearful of the consequences of Further Mathematics uptake (Craster, 2014), although the extra funding allocated for the 'brightest students' may go some way towards this. If the comfort/utility hypothesis posited by Matthews and Pepper (2007) is true, we may see fewer female students risking taking A level Mathematics. Indeed Professor Alice Rogers, a member of ALCAB's mathematics panel, sounded just such a warning (Henry, 2014).

2.6.2 Modern foreign languages

Modern foreign languages have seen a long term decline in A-level entries, of over 50% since the mid-1990s (Board and Tinsley, 2014). This is for a variety of reasons, such as society in general undervaluing language skills (Ipsos MORI, 2014) and a prevailing social climate of hostility to Europe (Malpass, 2014), as well as issues with content and assessment at GCSE and A level. The low uptake at A level has led in turn to a decline in the number of students studying language degrees, threatening the viability of as many as 40% of university language departments (Boffey, 2013).

In a survey undertaken by Bangor University in 1998, there was a suggestion of suppressed demand due to the narrowness of the curriculum: a substantial proportion of A-level students who were not studying a language stated that they would have done so had they had the

change to take another subject (Marshall, 2000). When such a possibility did arise under Curriculum 2000, early signs (in October 2000) were that language uptake at the new AS level had increased by 30% over the combined A level and Advanced Supplementary entry the previous year (Marshall, 2000). However, this proved to be a false dawn: firstly, there was a high drop-out rate between Bangor's survey in 2000 and the actual AS level entry (presumably related to the workload issues identified more widely), and secondly languages were more likely than other subjects to be dropped after the AS level (Marshall, 2001). As a result, entries in the first A2 cohort in 2002 were *lower* than previous figures.

Language uptake at A level has been affected by 'upstream' changes at GCSE and even earlier. Since 2004, it has not been compulsory to study languages to the age of 16, and this has resulted in a dramatic decline in GCSE language uptake from 76% in 2002 to 41% in 2012 (Board and Tinsley, 2014), with obvious consequences for A level uptake. Additionally, the recent practice of some schools in entering students for language GCSEs in Year 9, freeing up their time for 'more important' subjects in Year 10 and 11, means that these students may not achieve what they are capable of and, coupled with the two-year break from language study, this is likely to put them off further study in this area (Board and Tinsley, 2014). Gill (2013a) found that French was the fifth most popular subject for early GCSE entry in 2009 and 2011, with 9.8% and 11.6% (respectively) of entries made before Year 11. The current assessment regime of modern language GCSEs has been claimed to have an offputting effect too (Board and Tinsley, 2014), with students ending up learning controlled assessment tasks by rote and feeling they do not really know how to speak the language. Indeed, Ipsos MORI (2014) reported that only 18% of teachers feel that MFL GCSEs result in a fair evaluation of student's abilities. Board and Tinsley (2014) were particularly concerned about the decline in A level language entries in independent schools, as these pupils form a disproportionate number of university linguists.

Many teachers have cited the large jump in difficulty from GCSE to AS (Board and Tinsley, 2014; Ipsos MORI, 2014), greater than for other subjects, which makes taking a language at AS or A level a risky proposition for students, and for those who do decide to take it a disappointing result in AS often leads to dropping the subject. Indeed some teachers have deterred potential language students for this reason (Ipsos MORI, 2014). As with Mathematics (Matthews and Pepper, 2007), there is a perception by students that a special aptitude, an innate talent for language learning, is needed to do well at A level, which acts as a barrier to uptake.

There is a widespread belief among students and teachers that languages are harder than other subjects (Ipsos MORI, 2014), and this has been supported by subject comparability studies (Malpass, 2014); however, STEM subjects also rank as among the most difficult by these measures but are experiencing high uptake of late, perhaps because they are perceived as more useful and economically valuable in later life, whereas the benefit of MFL study is not so obvious to students (Ipsos MORI, 2014). A level grading is perceived by teachers as too harsh and unpredictable (Malpass, 2014; Ipsos MORI, 2014), and few students receive an A*.

Board and Tinsley (2014, sec. 8.3) asked teachers about their expectations of the impact of the forthcoming A level reforms. Very few believed that they would lead to higher uptake, and a total of 41% of state school respondents and 40% of independent school respondents believed that fewer students would study languages beyond GCSE. Additionally, 28% of respondents from state schools and 22% from independent schools thought that more students would be likely to opt for the AS without completing the full A level. However, for those students that do study languages, there was some support among teachers for the statement that the terminal exam would be a better reflection of the students' competence: Ipsos MORI (2014) reported that teachers felt a linear structure may be better for languages, even if not for all subjects. Board and Tinsley (2014) concluded that "the outlook for

languages post-16 [is] very bleak indeed". However there are some possible reasons for hope: firstly the EBacc accountability measure, which measures the proportion of pupils who achieve good GCSEs in a core of subjects including a foreign language, has resulted in a small upswing in GCSE entry (Board and Tinsley, 2014) which may yet have a positive effect on AS and A level figures. The reform of modern language GCSEs and the removal of controlled assessment may encourage more students to pursue a language afterwards. Recent policy changes on how resits of early entry GCSEs are treated in accountability measures may also help[14], although in a previous survey Tinsley and Board (2013) found that the Russell Group guidance and subsequent emphasis on facilitating subjects in A level accountability measures had had little impact on schools' advice to students about language AS/A levels; the largest effect of the early entry policy change is likely to be observed for English and Mathematics which are identified separately.

2.7 Predictive validity of AS

Some universities, such as Cambridge, have focused their objection to the reforms on the fact that they will no longer see the AS grades of applicants. Currently the UCAS application process requires state schools and colleges to declare the AS grades for their students, and as UCAS commented in their consultation response, these are commonly used in admissions decisions: "Some institutions will view the AS as an external validation of an applicant's predicted grades or as an indication of their progression towards their final A level results" (UCAS, 2014, p.3). The University of Cambridge has stated that it uses AS results because their predictive validity is higher than other measures such as GCSE results and predictions by schools (Partington, 2011).

In response to these concerns, DfE published a study (DfE, 2013a) which claimed that AS results were no better a predictor of degree performance than GCSE. However, this analysis was criticised by LSE (Johnston et al., 2014), chiefly because of the relatively weak relationship between GCSE and AS results. This meant that modelling based on AS results rather than GCSE changed the predicted outcome for 18.5% of students. Of these changes, there were more cases where performance improved from GCSE to AS to a sufficient extent to change the predicted outcome than where it fell back. The authors questioned whether it was desirable not to recognise this improvement.

The current 'semi-hooked' (Hodgson and Spours, 2003) status of AS level means that AS results reported by applicants to university have high predictive validity for *A level results*, because half of the marks for A level come directly from the AS marks already received (unless the AS units are subsequently resat). Decoupling will thus decrease the predictive validity of any AS grades obtained in Year 12 for A level, although there should be no direct effect on the relationship with other measures such as final degree class, unless students put less effort into preparing for their AS. However, decoupling will mean that the predicted A level grades provided to UCAS by the school will be less accurate than they are now.

During the transitional period, for entrance to university courses starting in 2017 and 2018, there will be a mixture of information available to universities: students from England will have some coupled AS grades and possibly some decoupled AS grades, while their counterparts in Wales and Northern Ireland will be reporting grades in AS which remain coupled to the A level but which will be worth 40% of the A level, rather than 50% as now.

[14]See https://www.gov.uk/government/news/changes-to-early-entry-at-gcse.

3 Subject uptake figures

3.1 Introduction

This section presents figures on the uptake of A and AS levels over recent years, to show overall trends in uptake, such as the number of A levels taken and the breadth of students' programmes, along with patterns in individual subjects. We also combine this data with information on subject entry at undergraduate level.

3.2 Data and methods

Degree subject uptake

The Higher Education Funding Council for England (HEFCE) regularly investigates demand and supply in higher education subjects, particularly those identified as 'strategically important and vulnerable subjects' (SIVS)[15], in order to monitor trends and judge what interventions might be necessary. To do this they combine data from a range of sources:

- Data on higher education students (those entering HE; all enrolled students; and those graduating) obtained from the Higher Education Statistics Agency (HESA)
- Acceptances by UCAS applicants each year
- A level entries by subject (from Joint Centre for Qualifications)
- Destinations of first degree qualifiers (from HESA)

Data is available to view and download, using an interactive querying program, via the HEFCE website[16]. We have used this source because, unlike the data available directly from the HESA website, it is available on a consistent basis for each year from 2002/03 to 2013/14, and first year students can be identified separately. The numbers reported are for students registered at English higher education institutions. We have used the number of full-time undergraduate entrants (Full Person Equivalent)[17].

Degree subject areas are generally defined according to the Joint Academic Coding System (JACS) subject classification. This is a 4-digit classification which identifies more than a thousand subject areas nested in around 20 'principal subject groups'. However, HEFCE has re-aggregated the subjects into groups and subgroups (details are given in Appendix A) so that, for example, Biological sciences does not include Psychology or Sports science; these re-aggregations are helpful from the point of view of comparing with A level subject data. In addition, HEFCE has dealt with the changes to the JACS subject classification in 2007/08 in its mapping and aggregation.

Data presented in this section covers the whole cohorts of full-time undergraduate students studying at English higher education institutions from academic year 2002/03 to 2013/14.

Entry figures (JCQ)

The A and AS level results data published by the Joint Centre for Qualifications (JCQ) each August also contains entry figures, which we have downloaded, collated and analysed. From

[15] The SIVS are science, technology, engineering and maths (STEM), modern foreign languages, and quantitative social science.

[16] http://www.hefce.ac.uk/analysis/supplydemand/

[17] The Full Person Equivalent measure makes allowance for students on combined courses, essentially apportioning them between the subject areas according to the balance of the course.

2001 onwards, these are available from the JCQ website[18], and for 1991–2000 from an archived version of the former QCA website[19].

These are a crude measure, as they include data relating to entries from candidates of any age, and retakes of a qualification. Additionally, the AS statistics are an underestimate of the number of students having *taken the units necessary to gain an AS qualification* because not all students would have certificated (cashed in) the AS. This underestimate should be less serious since 2011, when state schools and colleges were required to certificate AS levels in order to receive funding for the students; however, this does not affect independent schools. They are also slightly harder to interpret than the candidate-level data as the dates given are those when the qualification was certificated: typically, since 2002, the candidates certificating AS levels will be the cohorts one year behind the candidates certificating A levels.

For these reasons we have not made heavy use of the entry data in this report, and instead favoured the use of matched candidate-level data. However, there are two advantages to the entry data: firstly the data goes back further in time, and secondly data for 2014 AS entries are available now, giving an indication of the cohort due to complete their A levels in 2015.

Although in many cases it is possible to distinguish entries in England from those in Wales and Northern Ireland in the data, we have not done so here because this is not possible for all years and all qualifications.

The figures extracted include the GCE A level, Advanced Subsidiary (2001 onwards) and Advanced Supplementary (2001 and earlier) along with Applied A/AS levels (formerly VCE A/AS levels). Other qualifications (such as Advanced GNVQs, the predecessor to VCE) are not recorded.

A/AS level uptake (NPD)

Most of the data for the analysis of uptake of A and AS levels over time has been taken from the National Pupil Database (NPD), which overcomes the weaknesses of the JCQ entry data and gives a fuller and more accurate picture. This is an archive held by the Department for Education, consisting of results for all students in all subjects in schools and colleges in England, as well as pupil and school background characteristics such as gender and type of school attended. Because the data is available at an individual candidate level, it is possible to link the A and AS level entries for each student, eliminate resits of the same qualification, and investigate combinations of qualifications and subjects taken by students.

In order to focus on A and AS level candidates, Key Stage 5 (KS5) extracts of the NPD were used for each year. As the NPD was released for the first time with reference to the results achieved in 2004, the SixteeenPlusEighteenPlus (SpEp) Database was used in order to present uptake of A and AS levels from 2000 to 2003. For each year considered, only A and AS qualifications of 18 year olds in year 13 were included in the analysis. As for JCQ, the figures extracted include: GCE A level, Advanced Subsidiary, Advanced Supplementary as well as Applied A/AS levels (formerly VCE).

The A/AS level uptake was computed for the whole cohort of students in each year considered and breaking down the population by gender, school type and Free School Meal (FSM) eligibility, which can be considered as a measure of socio-economic deprivation. Information on FSM eligibility is only available in the NPD KS5 data for students from maintained schools and academies; it is not generally available for students from sixth form and FE colleges, nor for students at independent schools. To address this, we matched in

[18] http://www.jcq.org.uk/examination-results/a-levels
[19] http://web.archive.org/web/20020613041656/http://www.qca.org.uk/nq/subjects/

information on FSM eligibility for the same students using the Key Stage 4 (KS4) extracts from two years earlier. This brought down the percentage of missing data from around 40% of students to around 14% (the vast majority of whom attended independent schools) for each year. The disadvantage of matching in the KS4 data is that it brings forward the start date of data availability for FSM eligibility to 2009 (using KS4 data from 2007), and that the students may no longer have been eligible at the time they took their A levels. In all our analyses using FSM eligibility we have compared students recorded as eligible for FSM with those *explicitly recorded* as ineligible, and ignored those with missing values. Thus it should be borne in mind that these analyses do not generally include students at independent schools.

In order for students to be recorded as eligible for FSM, they must have actually *claimed* free school meals, as well as the school or local authority having satisfied themselves as to the students' eligibility. It is possible that the data quality of FSM eligibility has changed over time, as schools have recently been trying to address historic underreporting of students' FSM eligibility in order that the school can receive its entitlement to Pupil Premium funding.

Due to the large number of state comprehensive schools converted to or replaced by academies over recent years, these two school type categories have been amalgamated to permit a meaningful presentation of figures over the time period we are considering.

Population data (ONS)

In some cases the percentage of students taking a qualification/subject was computed with respect to the total population estimate of 18 year olds in England in each year, which we have termed the ONS (Office for National Statistics) cohort. We have collated the ONS's latest estimates (ONS, 2004; 2012a; 2012b) and projections[20] for each year from 1990 to 2020, and the number of 18 year olds in the population is shown in Figure 2. There was an increase in young people of this age from 1995 to a peak in 2009, since when the number of 18 year olds has been falling and this decline is projected to continue until 2020[21].

[20] National Population Projections, 2012-based. The principal projection has been used. See http://www.ons.gov.uk/ons/interactive/2012-npp/index.html

[21] However, the projections then show an increase during the 2020s in the 18-year-old population, to reach a count of 699,000 by 2029 (exceeding the previous peak in 2009).

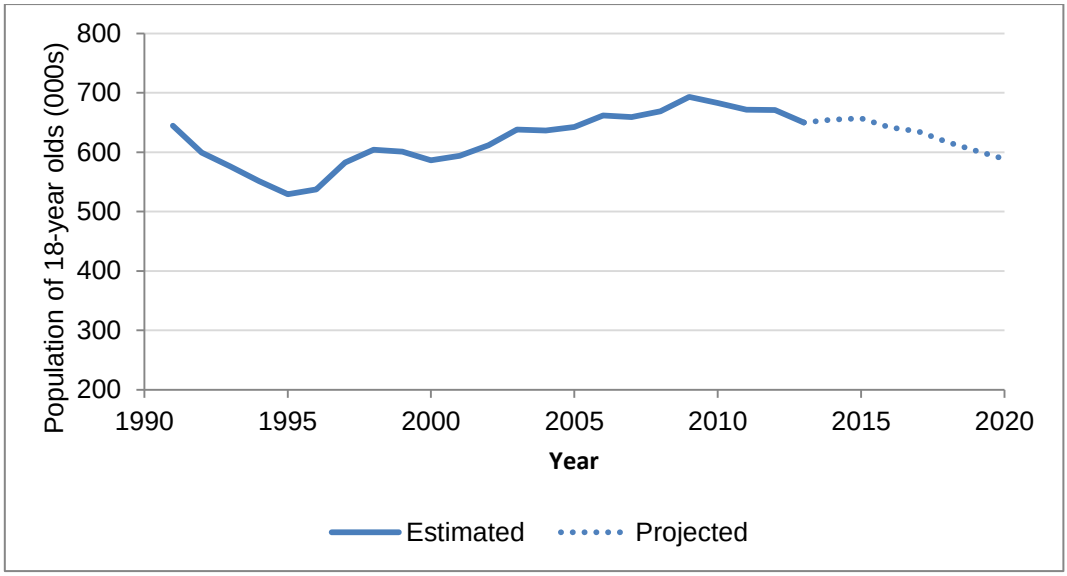


Figure 2: Estimated/projected population of 18-year olds in England by year, 1990–2020

3.3 Results - university level

The number of entrants to full-time undergraduate courses was expanding until recently, as shown in Figure 3. From the academic year 2002/03 to 2011/12, there had been a 27% increase. However, the numbers dropped sharply in 2012/13, probably as a result of the HE funding reforms and new higher tuition fees for students. Much of the decline is attributable to reduced entry to 'other undergraduate' courses other than first degrees, and the decline will also be influenced by students who chose not to take a gap year in 2011/12, thus resulting in an artificial increase in 2011/12 (HEFCE, 2014). There has been a partial recovery of numbers in 2013/14, but the picture will become clearer when data from 2014/15 is available.

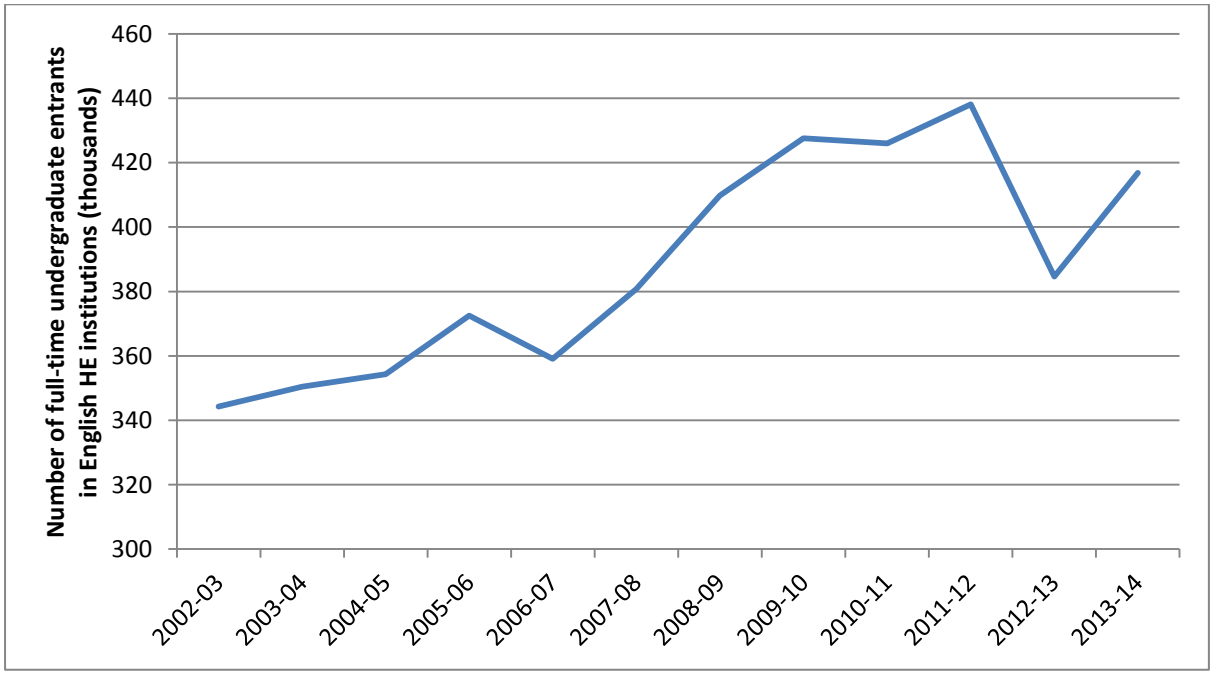


Figure 3: Full-time undergraduate entrants to English HE institutions: 1996/97–2013/14

Using the breakdown of full-time undergraduates by degree subject area provided by HEFCE, it is possible to look at the changes in the uptake of subjects at university level between 2002/03 and 2013/14. This can be done in two ways: firstly raw numbers of students, which (given the overall expansion in numbers) have increased in most subject areas except modern languages (both European, and Eastern, Asiatic & African), Geography, and most severely in Computer Sciences, as shown in Figure 4. An alternative is to look at the numbers of students in each area as a proportion of all students, as shown in Figure 5 which displays the distribution of undergraduates across degree subject areas in 2002/03 and in 2013/14 (panel *a.*). To highlight 'winners and losers', panel *b.* shows the percentage variation between 2013/14 and 2002/03, with red bars indicating subject areas where there has been an increase of the share of students and blue bars highlighting the subject areas that have experienced a reduction[22].

In both years presented, Business, Management and Administrative Studies was the most popular subject area and Veterinary Sciences the degree area with the smallest number of students. In terms of differences over time, Sports Science, Business, Management and Administrative Studies, Education and Social Studies are the subject areas that have increased most in relative popularity. On the other hand, Computer Sciences, Geography, Nursing and Subjects Allied to Medicine, Humanities and Language-based Subjects and modern languages were less popular (in relative terms) in 2013/14 than in 2002/03.

[22] The sum of the red bars exactly equals the sum of the blue bars, as the total share of students is 100% each year.

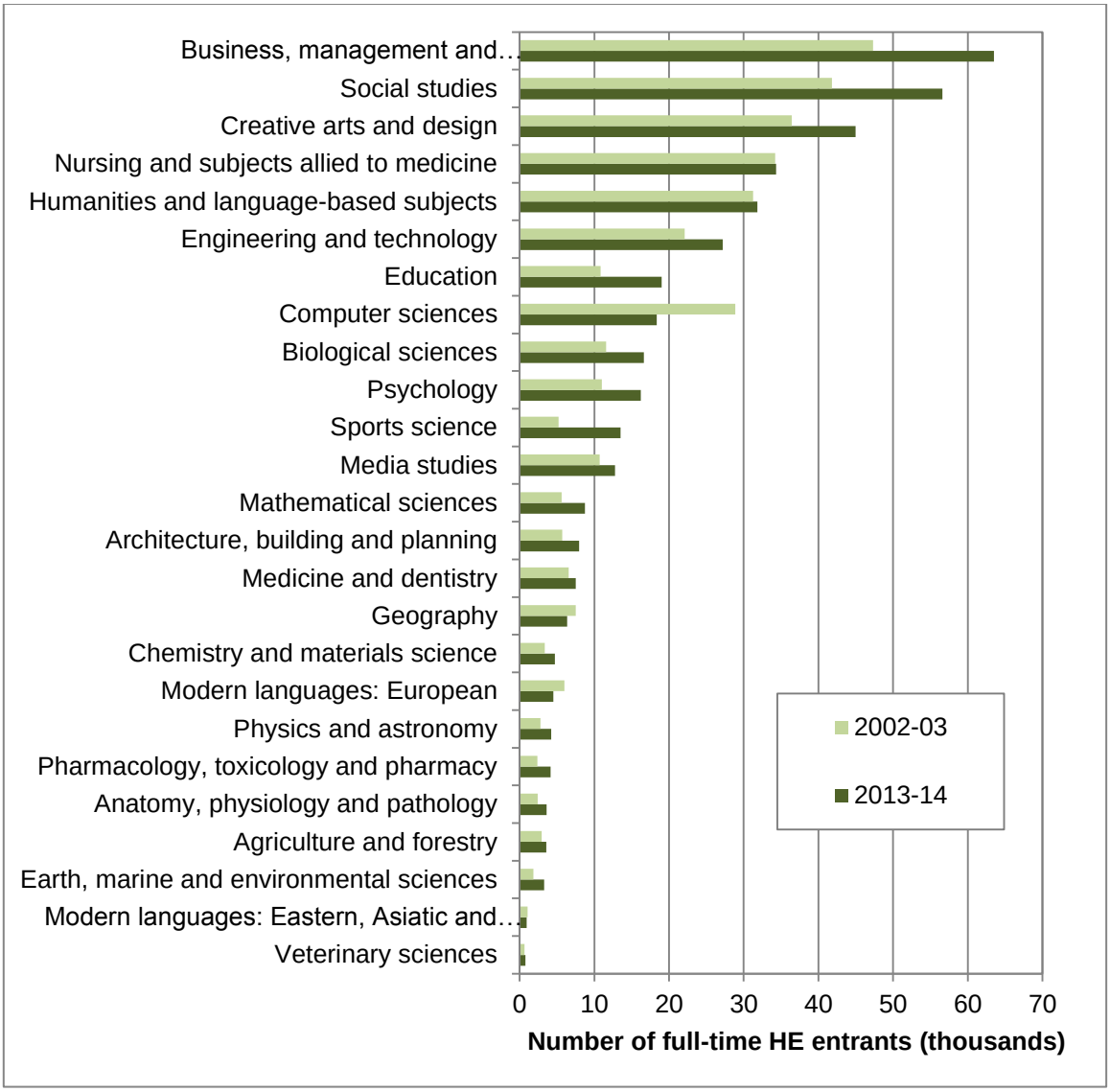
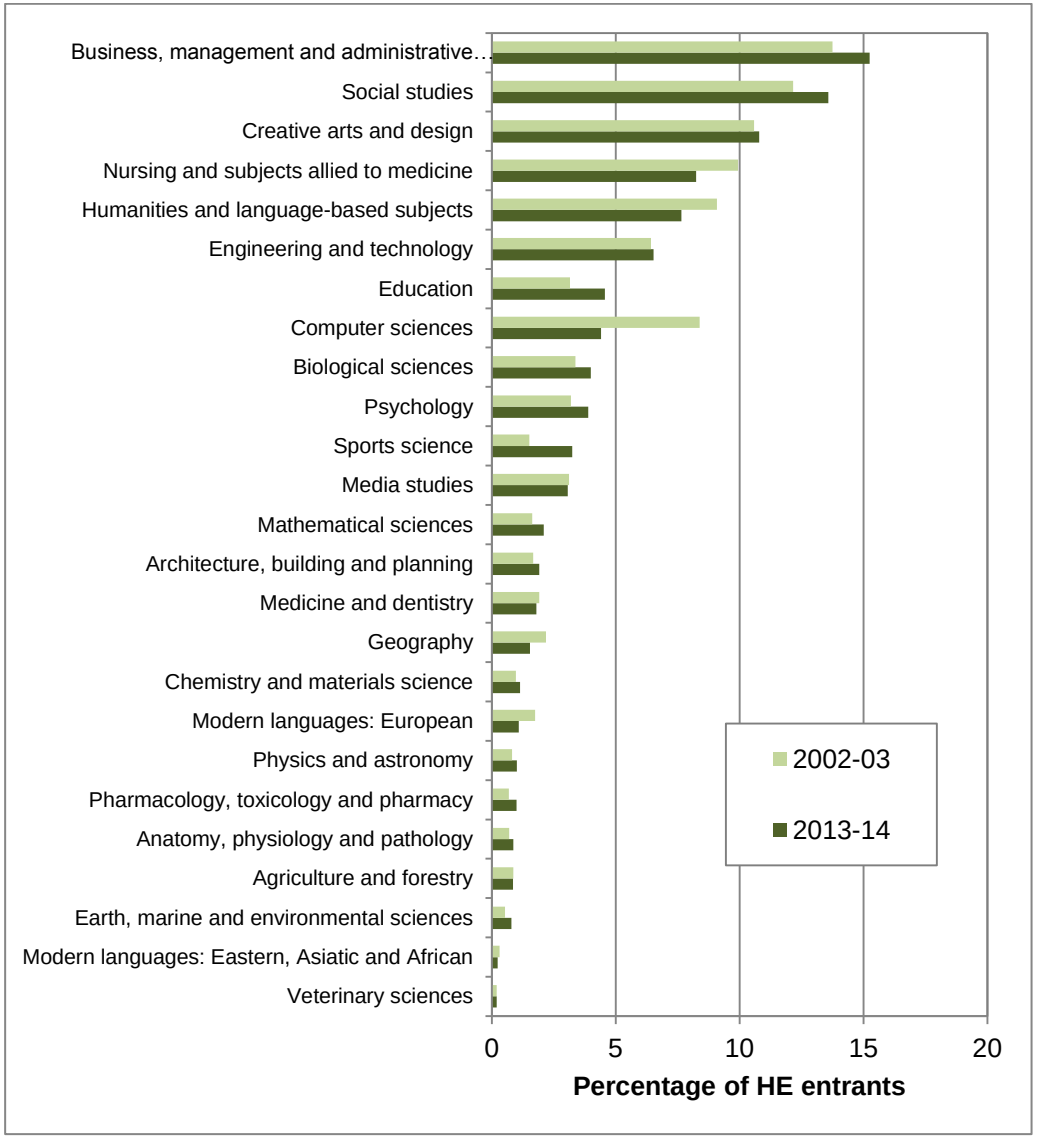


Figure 4: Degree subject uptake in 2002/03 and 2013/14; raw numbers of full-time undergraduate entrants



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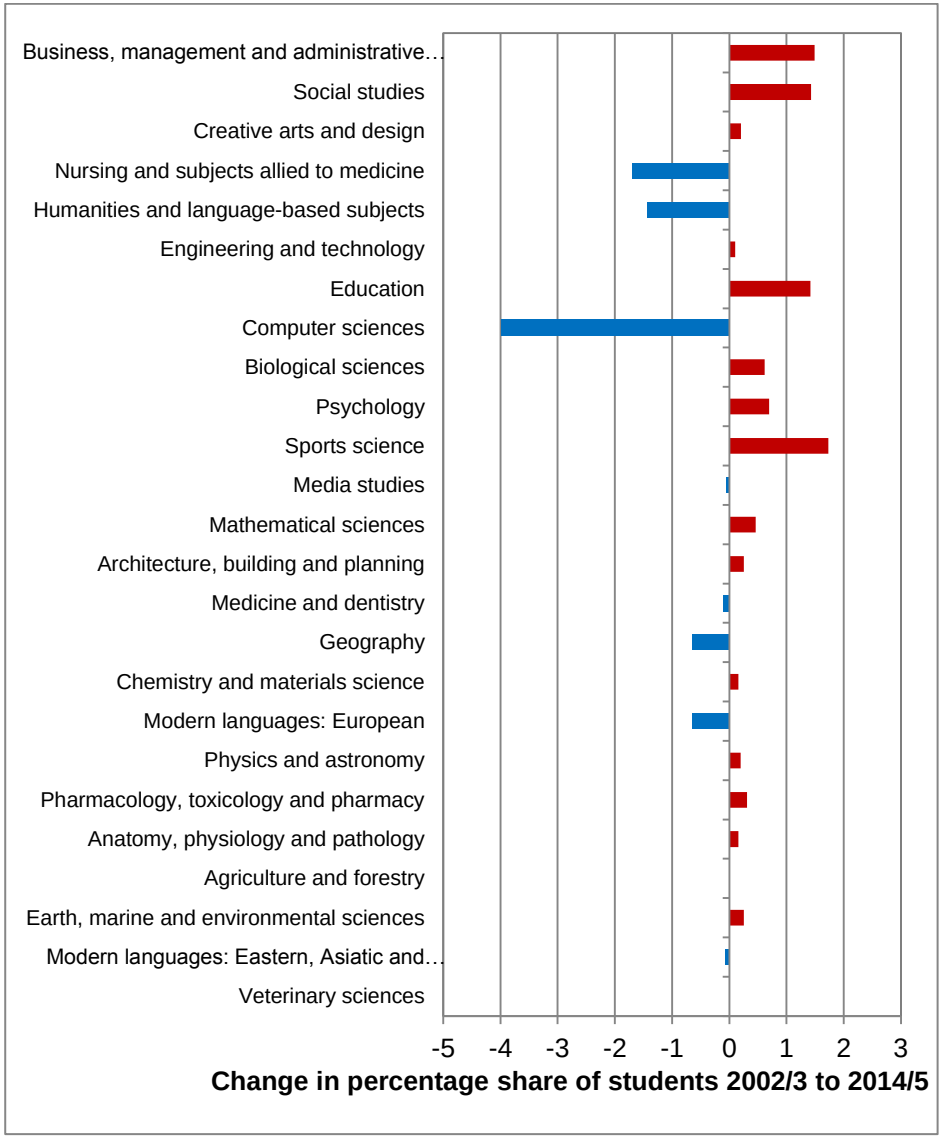


b.

Figure 5: Degree subject uptake in 2002/03 and 2013/14; distribution of students and percentage variation

3.4 Results - A/AS level

3.4.1 Entry figures

Table 3 shows the total entries by qualification, using data from JCQ, since 1991. The total GCE A level entry has grown steadily over time with a dip in 2002 (the first award of the Curriculum 2000 A levels) and an increase to a peak in 2011. The old AS level (Advanced Supplementary) had very low uptake which fell by two-thirds in 2001, the last year in which it was awarded[23]. The new AS (Advanced Subsidiary) has grown faster than the A level with a large increase in 2011, likely to be due to a policy change in cashing in by centres. The 2014 AS entry is 41% higher than that in 2002.

On the vocational/applied side, there was a large shift in 2005–6 when the VCE qualifications were replaced by Applied A/AS levels. The double VCE A level had been relatively popular but uptake dropped sharply under the new Applied A levels, and has continued to reduce to just 4266 entries in 2014. However, Applied AS levels were much more popular than their VCE counterparts. Uptake of all Applied A/AS level qualifications has been falling in recent years.

Table 3: Total entry by qualification type (thousands of entries), UK, 1991–2014

Year	GCE (not applied)			VCE/Applied			
	A level	AS	Adv Sup	A level	A level (double)	AS	AS (double)
1991	698.3		51.5				
1992	730.4		50.6				
1993	733.2		54.0				
1994	732.1		54.7				
1995	729.5		53.7				
1996	739.5		58.6				
1997	776.8		65.0				
1998	776.1		65.9				
1999	775.6		69.1				
2000	757.7		74.4				
2001	748.9	794.1	26.2	6.9			
2002	701.4	995.4		32.2	42.3	12.4	
2003	750.5	1,030.9		40.9	43.8	16.0	
2004	766.2	1,039.4		42.7	39.0	18.3	
2005	783.9	1,079.6		43.4	32.8	19.8	
2006	805.7	1,086.6		33.2	29.8	42.2	14.0
2007	805.7	1,114.4		33.5	15.3	51.0	15.6
2009	847.0	1,180.8		38.4	11.6	52.3	10.6
2010	853.9	1,197.5		36.8	9.6	50.8	8.6
2011	867.3	1,411.9		34.7	7.4	55.1	8.8
2012	861.8	1,350.3		32.4	6.6	50.2	7.1
2013	850.8	1,345.5		31.1	5.4	44.8	5.5
2014	833.8	1,412.9		29.1	4.3	44.4	5.0

[23] The reason for this is not immediately obvious, given that the Advanced Supplementary level was supposed to be a two-year qualification, and thus the last pre-Curriculum 2000 cohort would have taken their Advanced Supplementary exams in 2001. However, it seems likely to be due to an early withdrawal of Advanced Supplementary syllabuses.

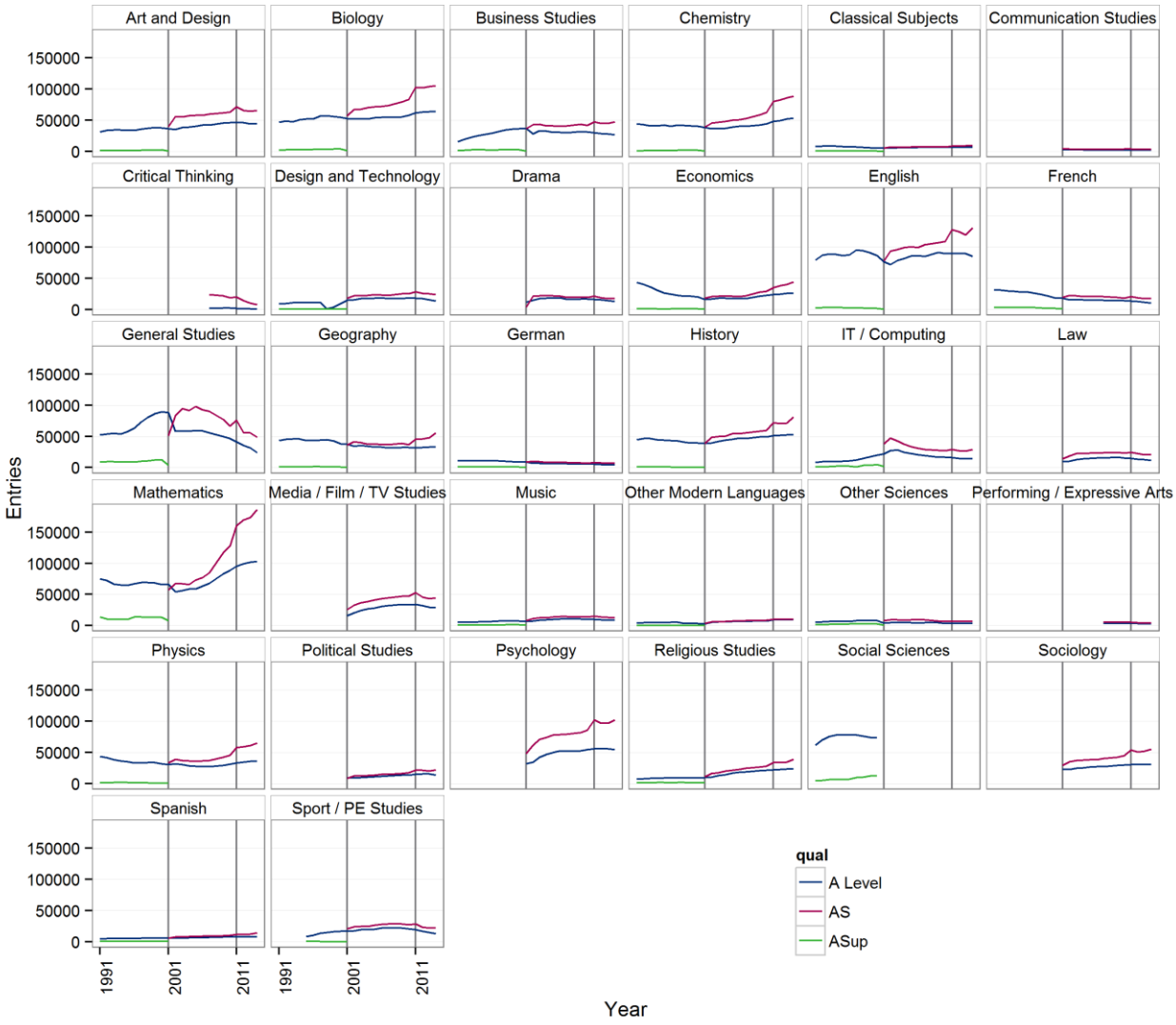


Figure 6: Total entry to GCE (non-applied) A levels by subject, 1991-2014

Figure 6 shows trends in entry to GCE A levels by subject using the JCQ data. In many cases the subject definitions have changed for the pre-2001 and post-2001 periods (for example Law, Psychology and Sociology were all included under Social Sciences before 2001) but several interesting patterns are visible:

- General Studies rose in popularity in the 1990s as a way of providing curriculum breadth. With the introduction of Curriculum 2000, the total number of students studying General Studies remained similar but a large proportion of the entry took only AS level. Entries in both A and AS level have been in decline for the last ten years.
- There was a noticeable increase in the AS entry in most subjects in 2011, likely to be due to the change in funding policy, requiring state-funded institutions to request certification of AS results in order for the course to be funded. The AS entry figures for the period 2001–2010 are thus likely to be an underestimate of the true number of students having gained enough credit to have been awarded an AS level. (This is still the case for the period since 2011, particularly for independent schools, but the degree of underestimation should be rather less.)
- Entries in AS Mathematics (which here includes AS Further Mathematics) have been rising steeply for the last ten years, at a faster rate than A level.

Figure 7 shows subject entry trends in VCE/Applied A levels since 2001. The new Applied A levels were introduced for first teaching in September 2005, and the first new AS levels were

available in 2006 (marked with a grey vertical line). In Applied Business, and Health and Social Care, the applied AS and A level grew at the expense of the double AS and A levels which had previously been more popular. This halving of the qualification size might allow students to have a more mixed programme. In Applied ICT, entries in A and AS level rose rapidly from 2001 to 2007 but there has been a slow decline since then. The decline had already started in double A levels from 2004. Applied Science has seen growth in both A and AS level entries since 2006.

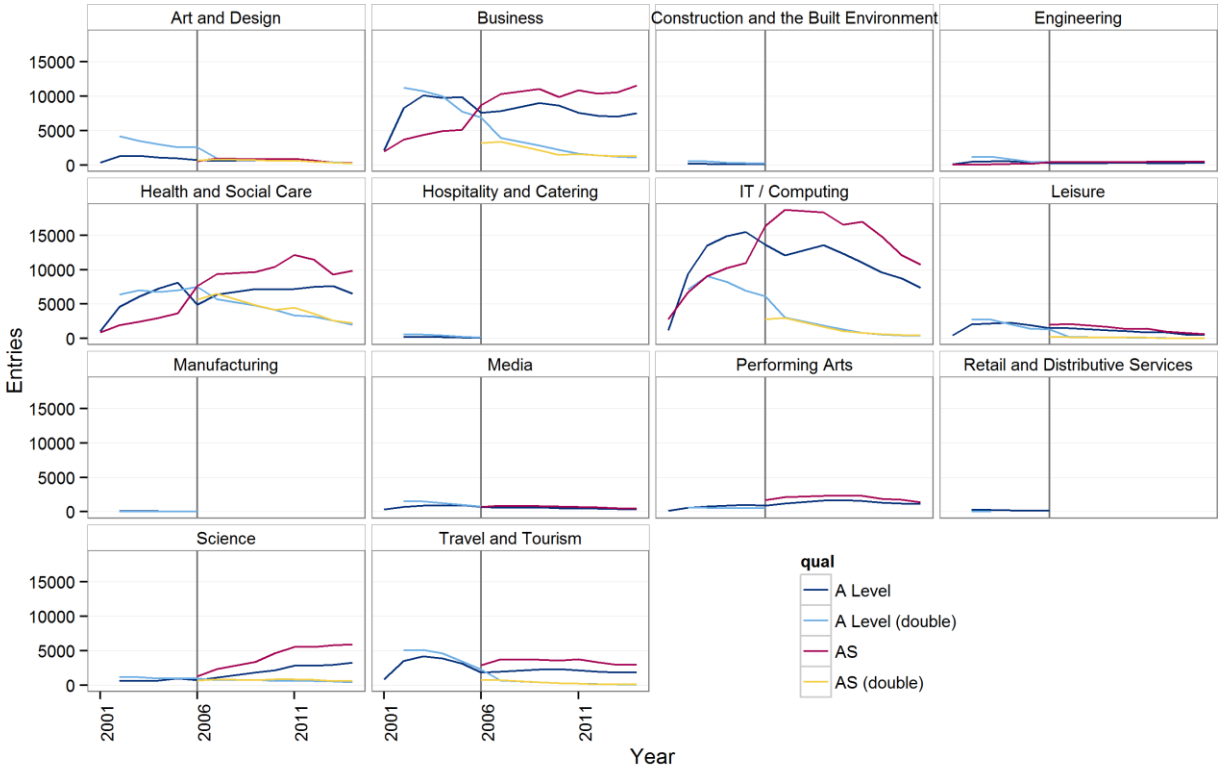


Figure 7: Total entry to VCE/Applied A levels by subject, 2001-2014

3.4.2 Number of A/AS levels taken by students

The number of 18 year-old candidates taking at least one A level in year 13 has generally been increasing since 2000, although with a slight reduction to 231,189 candidates in 2014. However, as shown in Figure 8, most of the increase can be explained by the increase in the reference population.

Figure 9 shows that the average number of A levels taken by candidates reduced slightly at the introduction of Curriculum 2000 and has been declining steadily since 2008, standing at 3.04 entries per candidate in 2014. However, when discounting General Studies and Critical Thinking from the number of subjects the number of entries has been more stable. The average number of additional AS levels[24] taken by candidates has generally been static (around 1.2, or 1.0 excluding General Studies and Critical Thinking) since the implementation of Curriculum 2000: the lower numbers in 2000 and 2001 relate to the previous Advanced Supplementary levels. The slight decline in AS entries per candidate since 2012 is accounted for by a drop in entries for General Studies and Critical Thinking.

The trend of the average number of A and AS levels taken by candidates is also mirrored by the total number of A and AS entries over time (Figure 10).

[24] That is, AS levels in subjects in which the candidate does not go on to receive an A level.

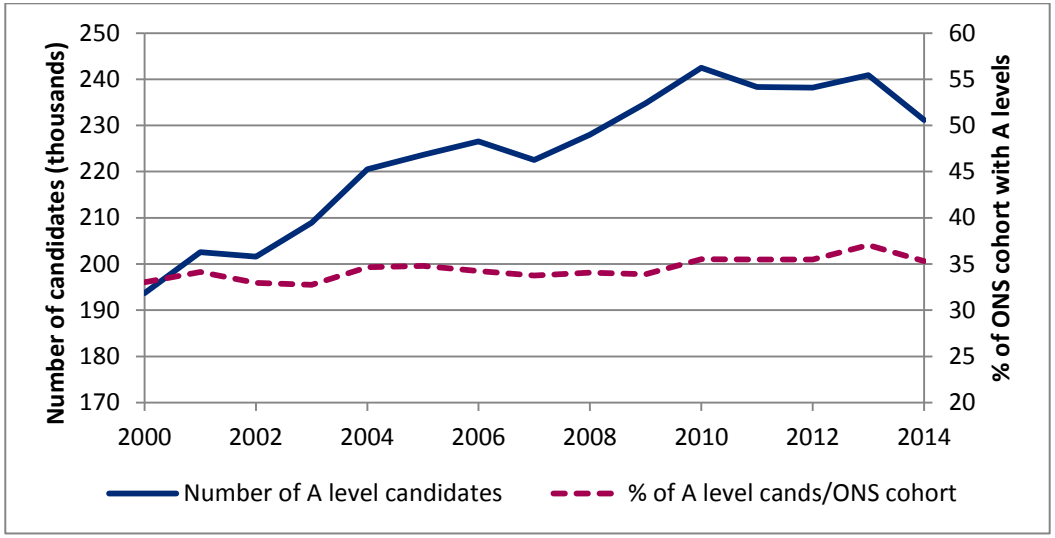


Figure 8: Number of candidates over time

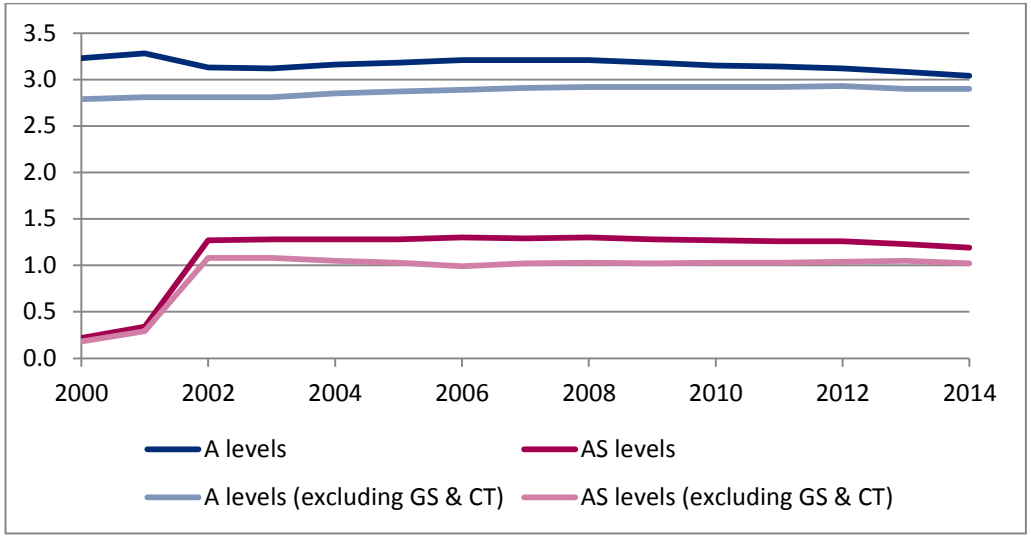


Figure 9: Average number of A and additional AS levels taken by students

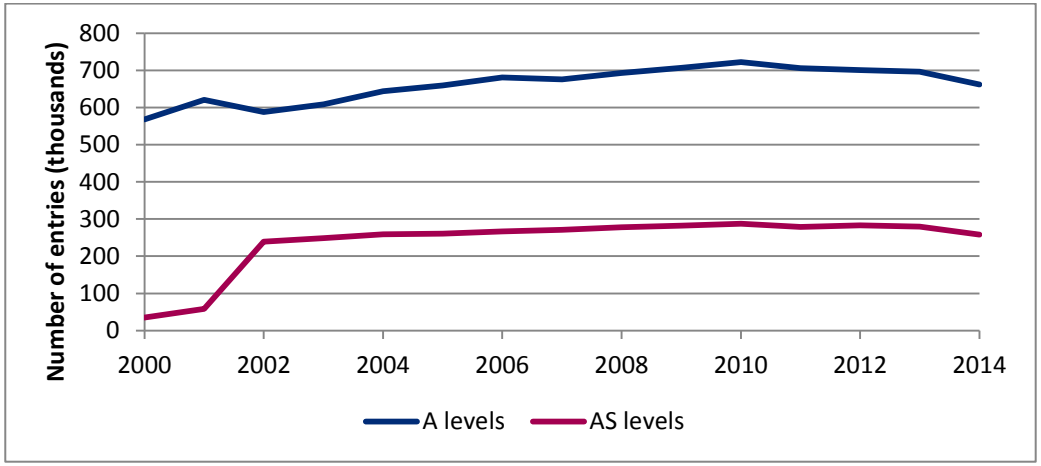


Figure 10: Number of A and additional AS entries over time

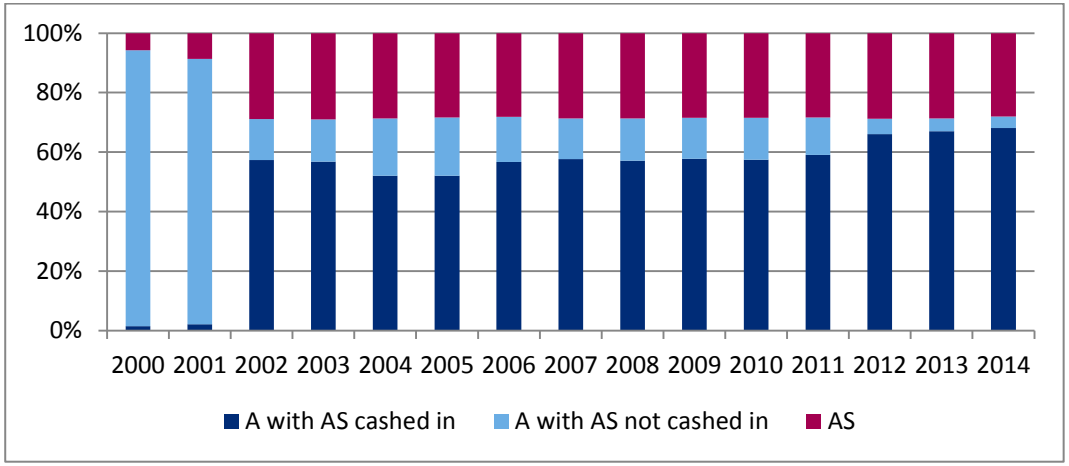


Figure 11: Percentage of entries over time, by qualifications certified

Figure 11 shows the breakdown of students' entries by type of qualification (A or AS) and, for A levels, if an AS in the equivalent subject was cashed in. Since 2002 the percentage of AS entries has been consistently just below 30% of the total, and the predominant pattern among A level students was to cash in their AS levels. A reduction in the percentage of A level entries where the AS had not been cashed in is apparent in 2012 (these students would typically have taken their AS exams in 2011), probably due to the change in the funding system as mentioned in section 3.4.1. As of 2014, Table 4 shows that the majority (82.9%) of cases where the AS was not cashed in were found in independent schools, where 19.5% of A level entries did not have an accompanying cashed in AS level. A level subjects where the highest proportions of students did not cash in their AS qualifications were Chinese (34%), Latin (24%), Further Mathematics (21%) of entries (see Appendix B), reflecting subjects where uptake is concentrated among independent schools.

Table 4: Patterns of cashing in AS level by school/college type, 2014

School/college type	Number of A level entries			Percentage of A level entries where AS not cashed in
	AS cashed in	AS not cashed in	Total	
Independent	122659	29807	152466	19.5
Selective	55069	347	55416	0.6
Secondary modern	9542	73	9615	0.8
Other state school	692549	3462	696011	0.5
Sixth form college	284005	1063	285068	0.4
FE/Tertiary college	77761	271	78032	0.3
Other/unknown	10161	953	11114	8.6
Total	1251746	35976	1287722	2.8

There are two possible explanations for this behaviour: firstly the AS units could have been taken in Year 12 but simply not certificated; alternatively the units could all have been taken in Year 13, either because the course was only studied over one year, or due to a centre policy to take all exams at the end of the course (likely only to be exercised by independent schools, due to funding imperatives for other school and college types). The NPD does not contain information on when individual units were sat, so we investigate this question with OCR candidates in section 3.6.

3.4.3 Configurations of A/AS levels taken by students

As there are no set programmes of study in the post-16 curriculum, students can enter different numbers and combinations of A and AS level qualifications. Table 5 shows the most common combinations taken by A level candidates in 2014, both overall and breaking down by gender. Table 5 highlights that by far the most common combination taken was three A levels and one AS. When male and female students are considered separately, no differential patterns arise.

The uptake of the most popular combinations of A/AS qualifications over time is presented in Figure 12, which clearly shows that the '3A + 1AS' configuration has been by far the most popular since 2002 and it has also greatly increased since 2008. From 2009, other quite popular combinations, such as '3A + 2AS' and '4A + 1AS', as well as those labelled as 'Other' in Table 5 have declined slightly.

In order to investigate this in more detail, we split the A and AS levels taken by each candidate to two groups: General Studies/Critical Thinking (GS/CT) and all other subjects. Table 6 shows those combinations of A and AS levels (each split into groups) where the uptake had changed by more than 1 percentage point between 2009 and 2014. It can be seen that the growth of the 3A+1AS combination (with no A/AS levels in GS/CT) has come primarily through students no longer taking an extra A level in General Studies or Critical Thinking: a common pattern was to take 3A+1AS in addition to their GS/CT A level, but some took 4 A levels (including one in GS/CT) so the extra A level in General Studies or Critical Thinking has been replaced by an AS.

Table 5: Most popular combinations of A and AS levels taken by A level candidates in 2014, by gender

Combinations of A and AS taken	*Female*		*Male*		*All*	
	N	*%*	*N*	*%*	*N*	*%*
<2A + 0AS	3885	3.0	3646	3.5	7531	3.2
2A only	3243	2.5	2570	2.5	5813	2.5
2A + 1AS	5951	4.5	5098	4.9	11049	4.7
2A + 2AS	4360	3.3	3681	3.5	8041	3.4
3A only	11988	9.2	8798	8.4	20786	8.8
3A + 1AS	53544	40.9	39835	38.1	93379	39.7
3A + 2AS	15580	11.9	11752	11.3	27332	11.6
4A + 0AS	4266	3.3	4686	4.5	8952	3.8
4A + 1AS	11323	8.7	9407	9.0	20730	8.8
>=5A + >=0AS	1456	1.1	1605	1.5	3061	1.3
Other	15295	11.7	13342	12.8	28637	12.2

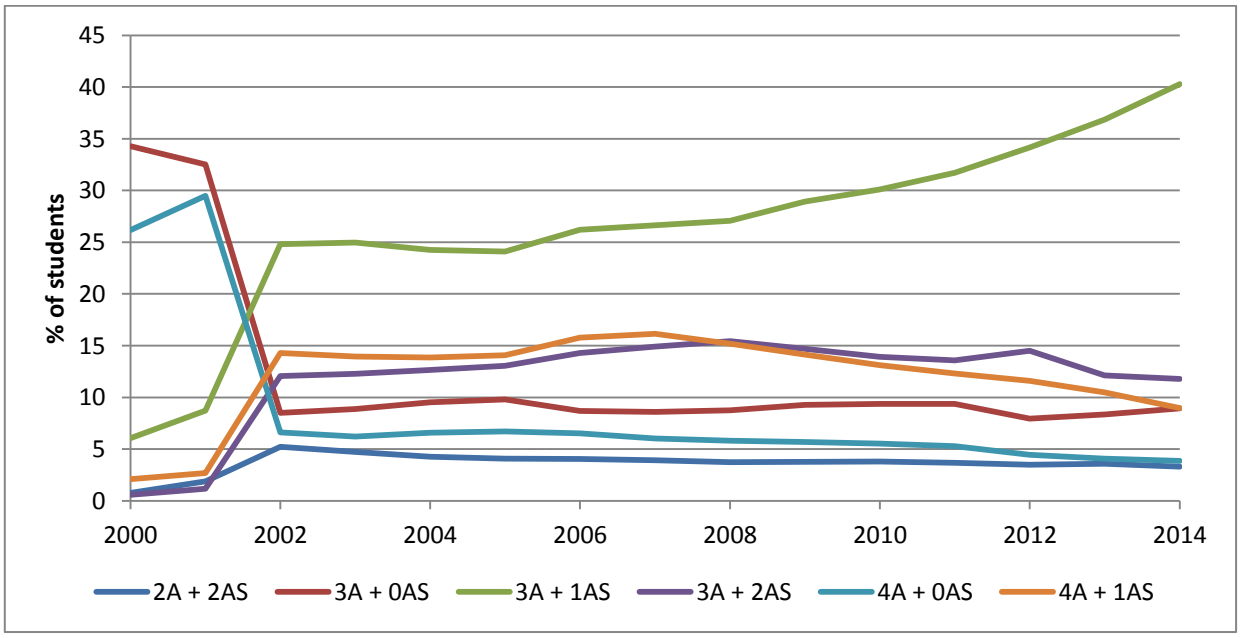


Figure 12: Most popular combinations of A and AS levels taken by students over time.

Table 6: Large changes to popularity of A/AS level combinations, accounting for General Studies and Critical Thinking separately

A levels (other)	AS levels (other)	A levels (GS/CT)	AS levels (GS/CT)	% of all cands 2009	% of all cands 2014	Change in candidates taking this combination (pp) 2009–2014
3	1	1	0	11.8	6.4	-5.5
3	0	1	0	4.1	0.8	-3.3
3	2	1	0	2.0	0.6	-1.4
2	1	1	0	1.6	0.3	-1.3
2	1	0	0	1.6	0.6	-1.1
3	1	0	0	22.4	40.0	+17.6

Table 7 shows that A level candidates eligible for Free School Meals were less likely to take one or two AS levels in addition to three A levels. This difference in the configurations of A/AS taken by students from different socio-economic backgrounds has increased slightly in 2014, as shown in Figure 13. This may be due in part to changes in data quality of the FSM eligibility indicator as described previously.

Table 7: Most popular combinations of A and AS levels taken by A level candidates in 2014, by Free School Meal eligibility.

Combinations of A and AS taken	*FSM Eligible*		*FSM Ineligible*	
	N	*%*	*N*	*%*
<2A + 0AS	773	6.8	5977	3.2
2A only	429	3.8	4806	2.6
2A + 1AS	717	6.3	9141	4.9
2A + 2AS	483	4.2	6633	3.5
3A only	1352	11.8	15863	8.4
3A + 1AS	4153	36.3	72817	38.8
3A + 2AS	892	7.8	23658	12.6
4A + 0AS	294	2.6	6469	3.4
4A + 1AS	569	5.0	17499	9.3
>=5A + >=0AS	71	0.6	2467	1.3
Other	1694	14.8	22471	12.0

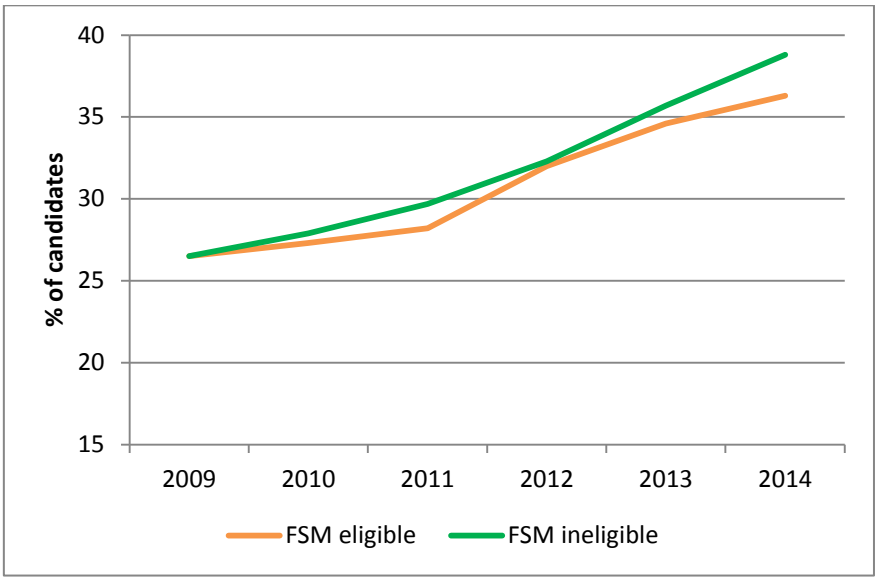


Figure 13: The uptake of the configuration '3A + 1AS' over time, by Free School Meal eligibility.

Table 8 presents the most popular combinations of A and AS taken by A level candidates in 2014 by type of school attended. It shows that the most popular combination '3A + 1AS' is taken by more than 50% of Independent students. This combination is also common among students from FE/Tertiary colleges (around 43%), while Secondary Modern students are the least likely to take this configuration (29%). The latter group of students is the most likely to take one AS in addition to two A levels as well as two and one A levels without any AS. On the other hand, combinations of A/AS involving more than 4 qualifications (i.e. '3A + 2AS' and '4A + 1AS') are quite popular among Selective students only.

Figure 14 displays the uptake of '3A + 1AS' over time by school type. It shows that this combination has been growing in popularity among all type of schools considered, though at different rates. This configuration became popular among students in the Independent sector and in Comprehensive schools since the introduction of Curriculum 2000. For candidates in FE/Tertiary colleges, the type of institution which is now second in terms of popularity of this combination, this combination grew slowly up to 2005 and became common only since 2009.

3.4.4 Uptake of A/AS level by subject

In this section the uptake of a selection of A/AS level subjects is presented. Most of the subjects included in this analysis were those with the largest uptake in 2014 with the addition of three modern foreign languages, French, Spanish and German. The year selected for comparison is 2001, the last year that pre-Curriculum 2000 A levels were awarded. Figures for all subjects in 2014 are presented in Appendix B.

Figure 15 shows the subject uptake at A level: panel *a*. shows the percentage of A level candidates taking each subject in 2001 and 2014, while panel *b.* displays the percentage variation between 2014 and 2001. From Figure 15 it is clear that Mathematics was the most popular subject at A level (excluding General Studies) in 2001 and its uptake has increased over time. Among sciences, the uptake of A level Biology and Chemistry increased, while it has slightly decreased for Physics. The A level subject with the greatest increase was Psychology: the percentage of A level candidates taking this subject grew from 10% in 2001 to 18% in 2014. It should be noted that, among the most popular subjects, History has also increased, though the size of the percentage variation is quite modest.

Table 8: Most popular combinations of A and AS levels taken by A level candidates in 2014, by type of school attended

Combinations of A and AS taken	Independent		Selective		Secondary modern		Comprehensive/ Academy		Sixth Form Colleges		FE/Tertiary Colleges	
	N	%	N	%	N	%	N	%	N	%	N	%
<2A + 0AS	535	1.8	9	0.1	199	9.8	4410	3.5	1479	3.0	507	3.5
2A only	532	1.8	3	0.0	157	7.8	3861	3.1	849	1.7	275	1.9
2A + 1AS	924	3.1	36	0.4	204	10.1	6774	5.4	2130	4.3	657	4.5
2A + 2AS	430	1.4	75	0.9	90	4.4	4390	3.5	1638	3.3	934	6.4
3A only	3413	11.4	183	2.2	262	12.9	11485	9.2	2802	5.7	2152	14.8
3A + 1AS	15389	51.5	2806	33.4	596	29.4	48528	38.9	18271	37.0	6620	45.4
3A + 2AS	2349	7.9	2087	24.9	89	4.4	15264	12.2	6242	12.7	983	6.7
4A + 0AS	2205	7.4	432	5.1	69	3.4	4433	3.6	1268	2.6	488	3.3
4A + 1AS	2294	7.7	1516	18.1	73	3.6	10012	8.0	6576	13.3	194	1.3
>=5A + >=0AS	487	1.6	363	4.3	11	0.5	1490	1.2	677	1.4	25	0.2
Other	1334	4.5	886	10.6	274	13.5	14126	11.3	7401	15.0	1740	11.9

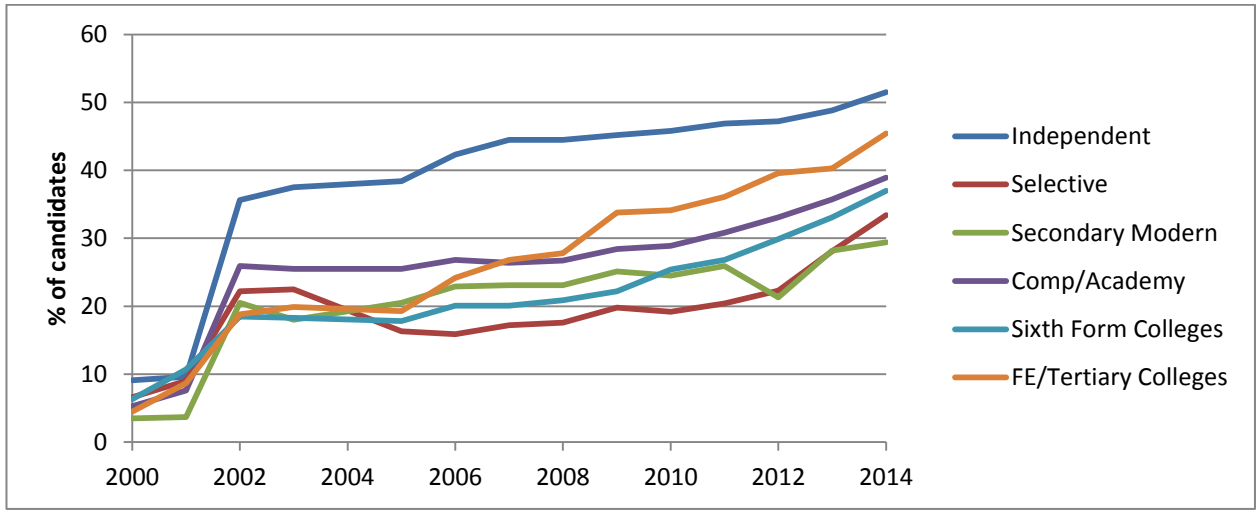
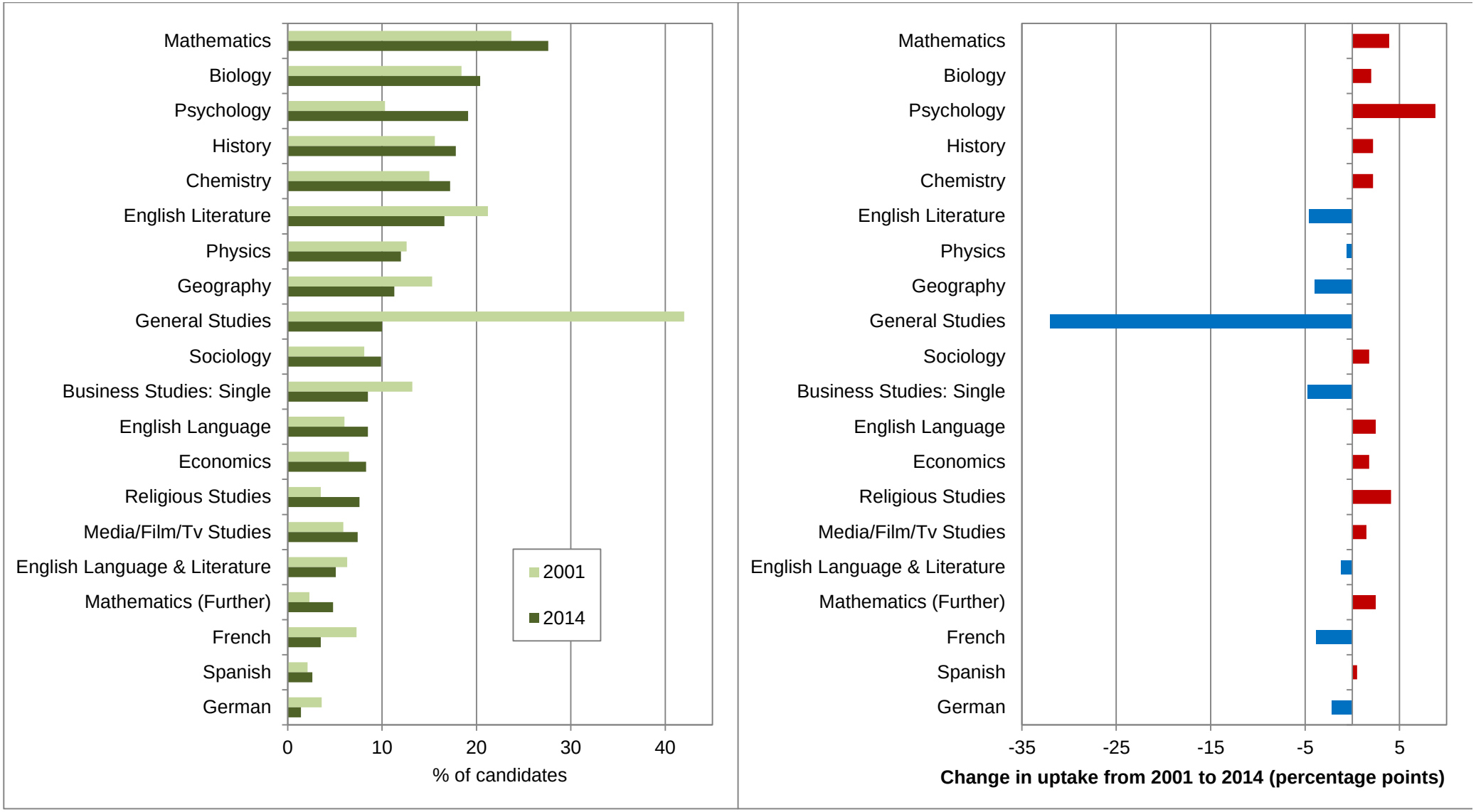


Figure 14: The uptake of the configuration '3A + 1AS' over time, by school type



a. *b.*

Figure 15: A level subject uptake in 2001 and 2014: winners and losers

On the other hand, General Studies was the subject with the largest reduction in uptake at A level, from 42% of students in 2001 to just 10% in 2014. A reduction in the uptake from 2001 to 2014 has also affected English Literature, Geography, Business Studies, French and German (although Spanish has increased in popularity), though the size of the percentage variation in these cases has also been below 5%. It should be noted that the reduction in the uptake of English Literature has corresponded to an increase in English Language, suggesting a movement of candidates.

An alternative way at looking at uptake is to consider the uptake of A *and/or* AS levels in a subject. This gives an indication of the number of students going on to study a subject after GCSEs, also an important measure (for example, in Mathematics, where the Government has stated an ambition to increase the numbers taking the subject after age 16). Results are shown in Figure 16 for 2001 (the last award of A levels before Curriculum 2000), 2002 (the first Curriculum 2000 cohort) and 2014 in panel *a*, and the change from 2002 to 2014 in panel *b*.

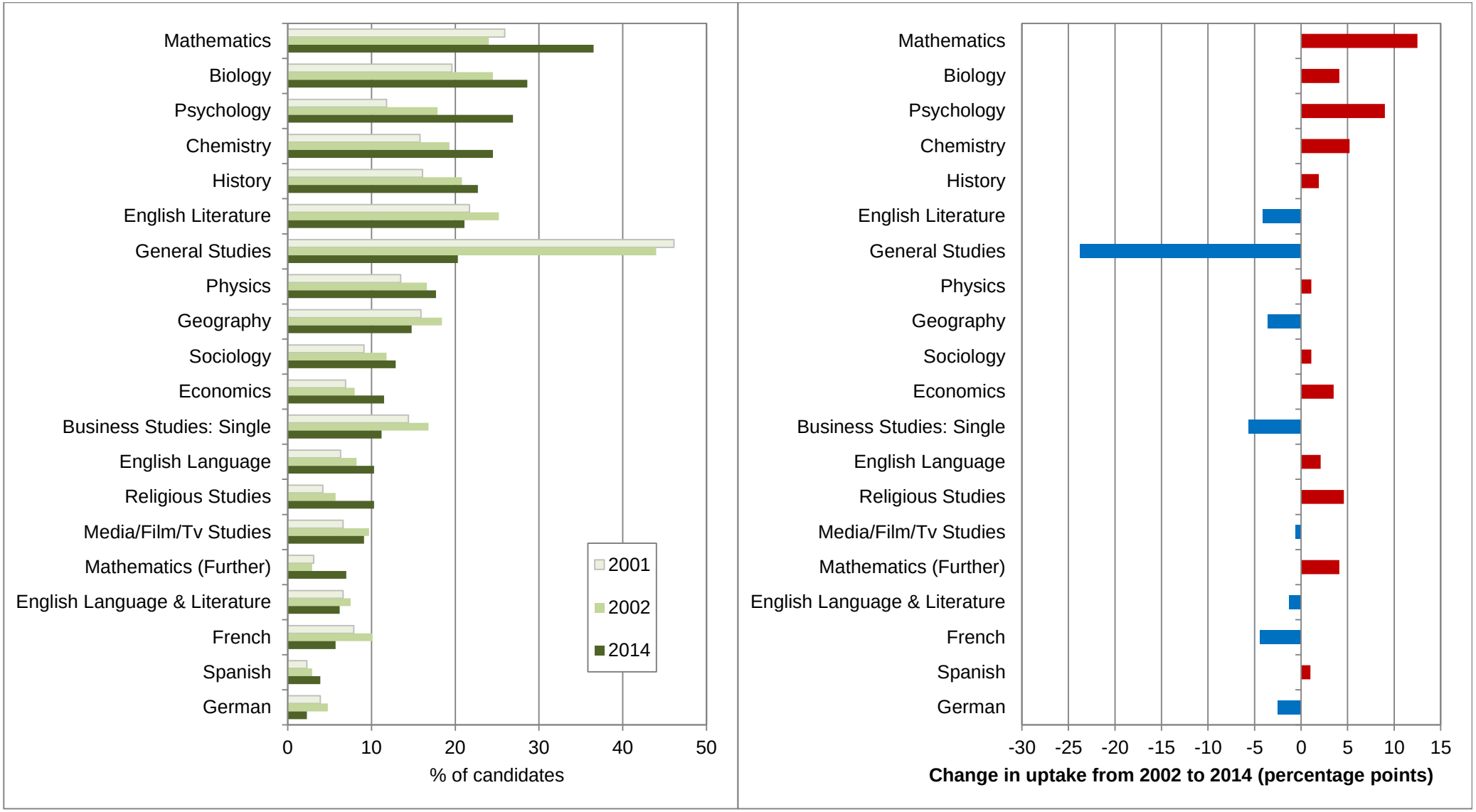
In almost all subjects there was a large increase from 2001 to 2002 in the numbers studying an AS or A level. The exceptions are Mathematics (where there were issues with the Curriculum 2000 specification and assessment, as discussed in section 2.6.1) and General Studies (where this is part of a longer term decline). Since 2002, the trend has been similar to that at A levels (Figure 15), with growth in sciences, Mathematics and Psychology, and a decline in General Studies, English Literature, Geography, Business Studies and languages (except Spanish).

Trends for uptake of A and A/AS levels in each year are plotted individually for a larger set of subjects[25] in Figure 17 over time for each year from 2000. Generally, trends are smooth, but several interesting features are apparent:

- The popularity of science and Mathematics A levels has gathered pace since 2010.
- General Studies had been declining slowly until around 2006, but the decline has since accelerated; Critical Thinking AS reached a peak in the mid-2000s but has since declined.
- The turning point of Mathematics seems to be in 2005 (see section 2.6.1)
- Initial growth in Psychology has levelled out since 2010.
- In the early days of Curriculum 2000, certain mathematics AS qualifications were quite popular (but not at A level) such as Applied Mathematics. This is likely to be an artefact of the specifications on offer at the time, or the way that subjects have been coded in the NPD and Sixteen Plus/Eighteen Plus database. It is unlikely to be a genuine change in what students were actually studying.

Since the introduction of Curriculum 2000, students have been able to drop subjects after studying them for a year and gaining an AS level. Figure 18, panel *a.*, displays the drop rate for each subject in 2002 and 2014 (that is, the number of students dropping subjects after AS levels, as a proportion of the total number of students taking AS and/or A levels in the subject). General studies, along with the sciences (Physics, Biology and Chemistry) and modern foreign languages (French, Spanish and German) were among the most dropped subjects and the percentage of candidates dropping them has also increased over time. Other subjects dropped by more than 10% of A level candidates after AS also include Psychology and History.

[25] We chose the 36 subjects with the highest maximum uptakes recorded at any point over the 15 year period.



a. *b.*

Figure 16: Uptake of subjects at A and/or AS level in 2001, 2002 and 2014

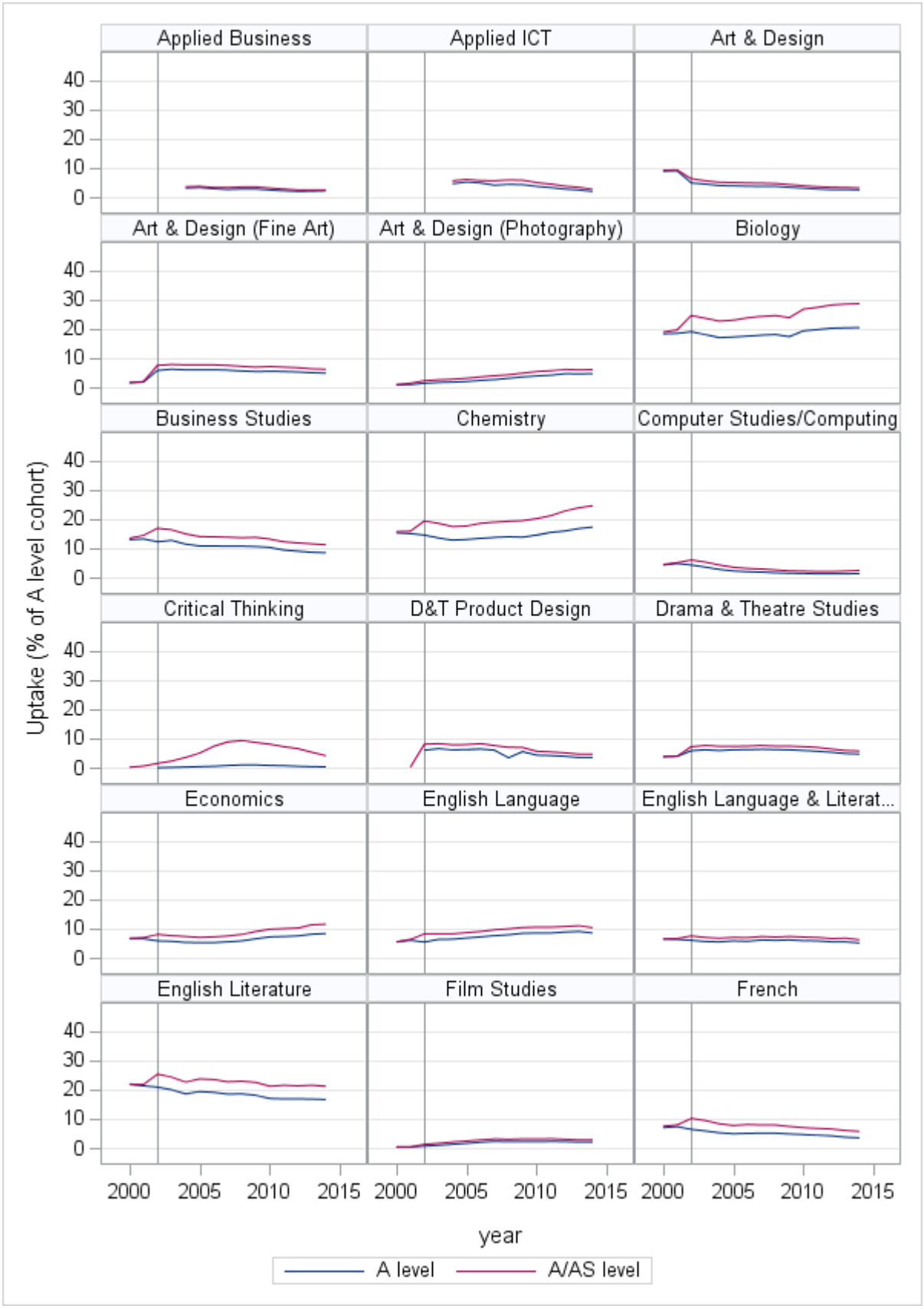


Figure 17: Trend in entries by subject over time

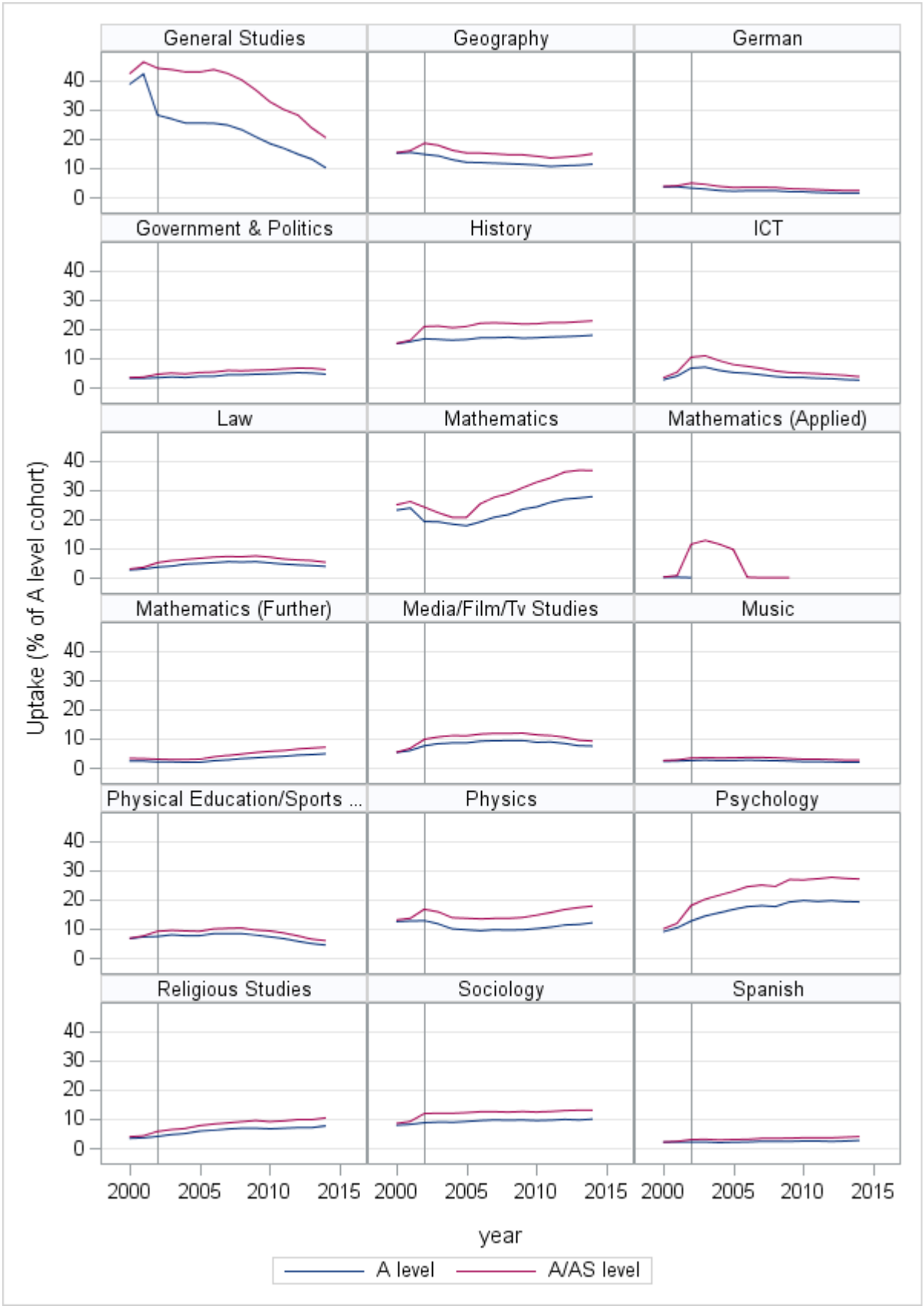
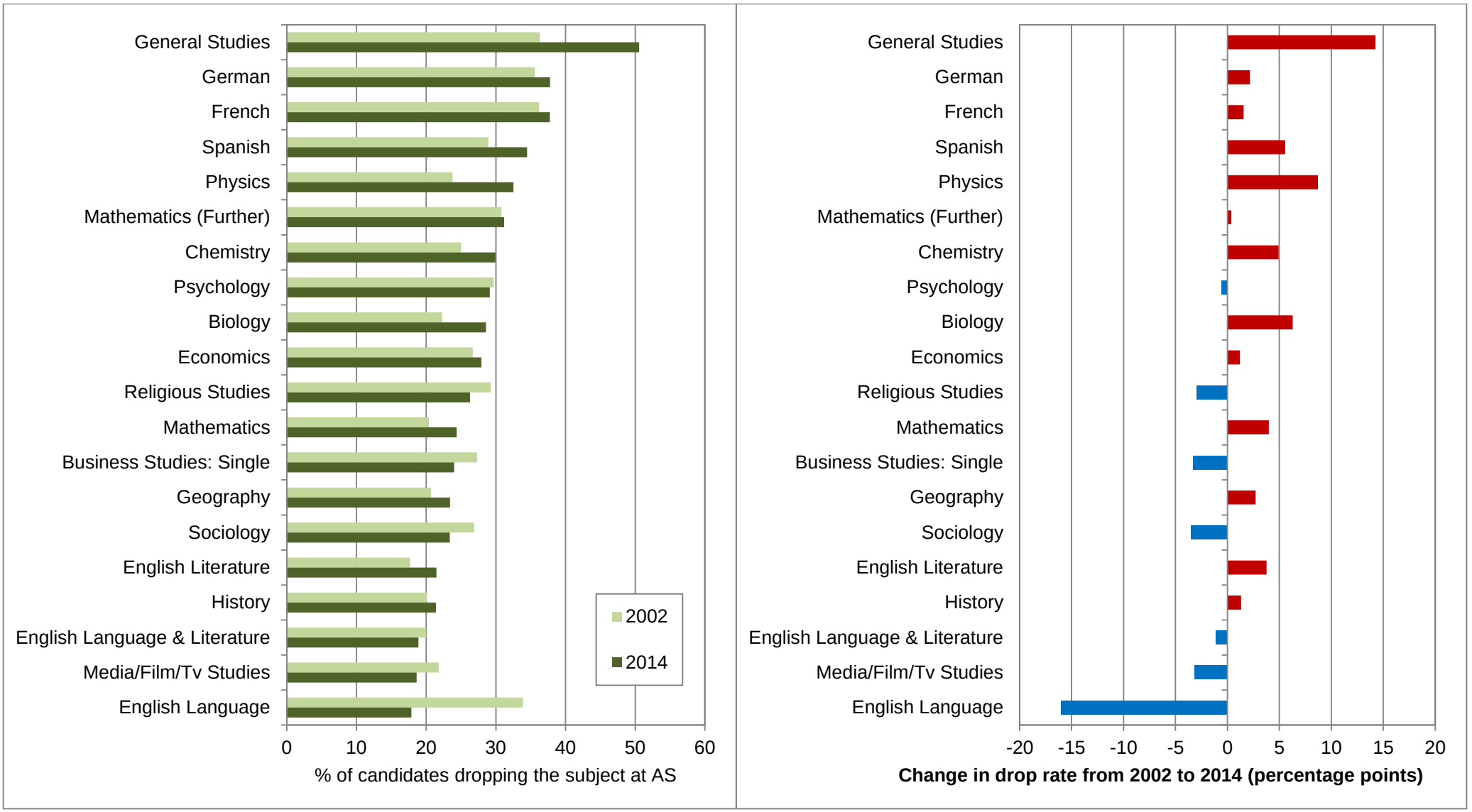


Figure 17 (continued): Trend in entries by subject over time



a. *b.*

Figure 18: AS subjects dropped in 2002 and 2014

3.4.5 Combinations of qualifications and subjects – 2014 data

For the most common combinations of qualifications taken by the cohort of A level candidates in 2014, it is of interest to look at the most common subjects taken at A/AS level. Table 9 shows the ten most common subjects taken by candidates taking three A levels and one AS. The most popular combination by far is taking Biology, Chemistry and Mathematics at A level and Physics as a fourth AS subject (taken by 1.7% of all A level students with three A levels and one AS in 2014), followed by Chemistry, Mathematics and Physics at A level with Biology at AS (1.0%). The combinations reported in Table 9 contain a relatively restricted range of A level subjects, all of which are sciences or Mathematics: non-scientific subjects such as Psychology, History, Geography and Economics appear only as a fourth AS subject.

The ten most common subjects taken by students taking three A levels only, listed in Table 10, are quite different from those presented above. Although the two most popular combinations feature only sciences and Mathematics (Biology, Chemistry and Physics, followed by Chemistry, Mathematics and Physics), there is a notable presence of non-scientific subjects, such as English Literature, History, Sociology, Psychology and Religious Studies.

Table 9: The ten most common subject combinations - candidates taking 3 A levels and 1 AS

A level subject 1	***A level subject 2***	***A level subject 3***	***AS subject***	***N***	***%***
Biology	*Chemistry*	*Mathematics*	*Physics*	1629	1.7
Chemistry	*Mathematics*	*Physics*	*Biology*	895	1.0
Biology	*Chemistry*	*Mathematics*	*Psychology*	728	0.8
Mathematics	*Mathematics (Further)*	*Physics*	*Chemistry*	705	0.8
Biology	*Chemistry*	*Psychology*	*Mathematics*	510	0.5
Biology	*Chemistry*	*Mathematics*	*History*	496	0.5
Biology	*Chemistry*	*Physics*	*Mathematics*	490	0.5
Biology	*Mathematics*	*Physics*	*Chemistry*	442	0.5
Biology	*Chemistry*	*Mathematics*	*Geography*	430	0.5
Biology	*Chemistry*	*Geography*	*Mathematics*	368	0.4

Table 10: The ten most common subject combinations - candidates taking 3 A levels only

A level subject 1	***A level subject 2***	***A level subject 3***	***N***	***%***
Biology	*Chemistry*	*Mathematics*	385	1.9
Chemistry	*Mathematics*	*Physics*	334	1.6
English Literature	*Psychology*	*Sociology*	152	0.7
English Literature	*History*	*Psychology*	151	0.7
Biology	*Chemistry*	*Psychology*	145	0.7
English Literature	*History*	*Religious Studies*	132	0.6
Mathematics	*Mathematics (Further)*	*Physics*	120	0.6
History	*Psychology*	*Sociology*	110	0.5
English Literature	*History*	*Sociology*	105	0.5
Law	*Psychology*	*Sociology*	100	0.5

For students taking three A levels and two AS in 2014 the ten most common subject combinations are reported in Table 11. The most popular choice was taking Biology, Chemistry and Mathematics at A level plus Physics and General Studies or Critical Thinking at AS. Overall, it is worth noting that for candidates in the '3 A + 2 AS' route, General Studies is frequently one of the two AS subjects taken.

Table 12 shows the most common subject combinations chosen by candidates taking four A levels and one AS. Also in this case only combinations of sciences, Mathematics and Further Mathematics, Psychology, General Studies and Critical Thinking appeared among the ten most common combinations taken.

In all the tables presented in this section, however, it should be noted that the most common subject combinations are taken by a small number of students (less than 2% of the total number of taking the particular configuration of A and AS levels, and still less as a proportion of the total cohort). This suggests that students take a wide combination of subjects.

Table 11: The ten most common subject combinations - candidates taking 3 A levels and 2 AS

A level subjects			***AS level subjects***		***N***	***%***
Biology	*Chemistry*	*Mathematics*	*General Studies*	*Physics*	256	0.9
Chemistry	*Mathematics*	*Physics*	*Biology*	*General Studies*	135	0.5
Biology	*Chemistry*	*Mathematics*	*Critical Thinking*	*Physics*	134	0.5
Chemistry	*Mathematics*	*Physics*	*Biology*	*Mathematics (Further)*	118	0.4
Mathematics	*Mathematics (Further)*	*Physics*	*Chemistry*	*General Studies*	118	0.4
Biology	*Chemistry*	*Mathematics*	*General Studies*	*Psychology*	108	0.4
Biology	*Chemistry*	*Physics*	*General Studies*	*Mathematics*	101	0.4
Biology	*Chemistry*	*Mathematics*	*General Studies*	*Geography*	87	0.3
Biology	*Chemistry*	*Mathematics*	*General Studies*	*History*	86	0.3
Biology	*Chemistry*	*Psychology*	*General Studies*	*Mathematics*	81	0.3

Table 12: The ten most common subject combinations - candidates taking 4 A levels and 1 AS

A level subjects				***AS level subject***	***N***	***%***
Biology	*Chemistry*	*General Studies*	*Mathematics*	*Physics*	239	1.1
Chemistry	*Mathematics*	*Mathematics (Further)*	*Physics*	*Biology*	201	1.0
Biology	*Chemistry*	*General Studies*	*Psychology*	*Mathematics*	121	0.6
Biology	*Chemistry*	*General Studies*	*Physics*	*Mathematics*	111	0.5
Biology	*Chemistry*	*General Studies*	*Mathematics*	*Psychology*	110	0.5
Chemistry	*General Studies*	*Mathematics*	*Physics*	*Biology*	110	0.5
Biology	*Chemistry*	*Mathematics*	*Physics*	*Mathematics (Further)*	106	0.5
Chemistry	*Mathematics*	*Mathematics (Further)*	*Physics*	*General Studies*	92	0.4
General Studies	*Mathematics*	*Mathematics (Further)*	*Physics*	*Chemistry*	92	0.4
Chemistry	*Mathematics*	*Mathematics (Further)*	*Physics*	*Critical Thinking*	86	0.4

3.4.6 Breadth of students' programmes

To investigate the breadth of students' programmes of study, we first classified each subject into a category (reflecting the categorisations used in our Statistical Reports series). The percentage of subject entries in each category (excluding General Studies and Critical Thinking) is shown in Figure 19, for A level and A/AS level (but discounting AS levels from candidates who were subsequently awarded the full A level). This confirms some of the trends for subjects apparent in subject 3.4.4, for example the rise of science subjects since 2010, and the decline of languages. Whether or not AS levels are included makes little difference to the balance of subject areas.

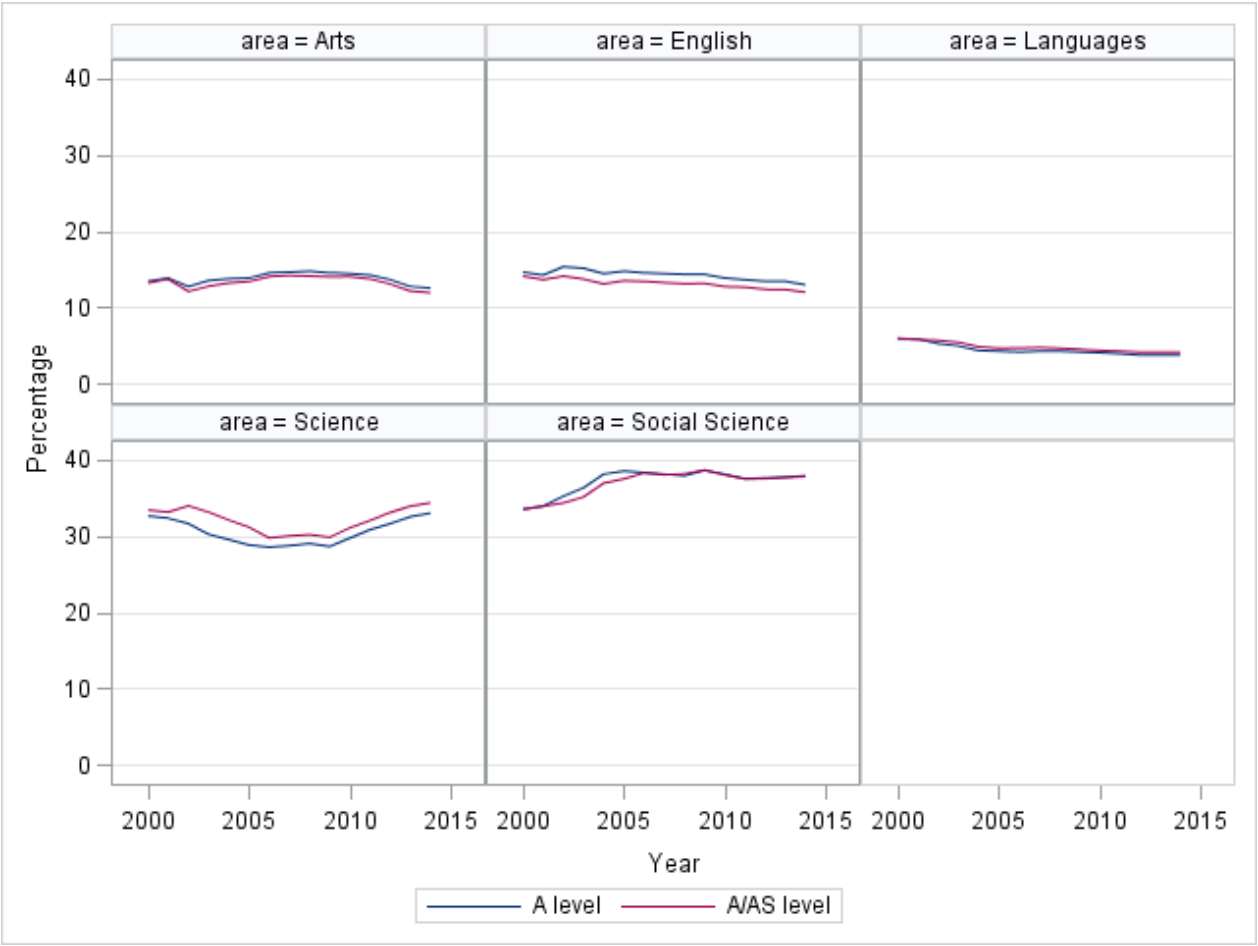


Figure 19: Percentage of entries within subject areas, 2000–2014

However, the balance of entries between areas is very different depending on gender, as shown in Figure 20. Male students are more likely to study science subjects, while female students are more likely to study other subject areas, in particular English. The gender gap in science entries has been widening since 2010.

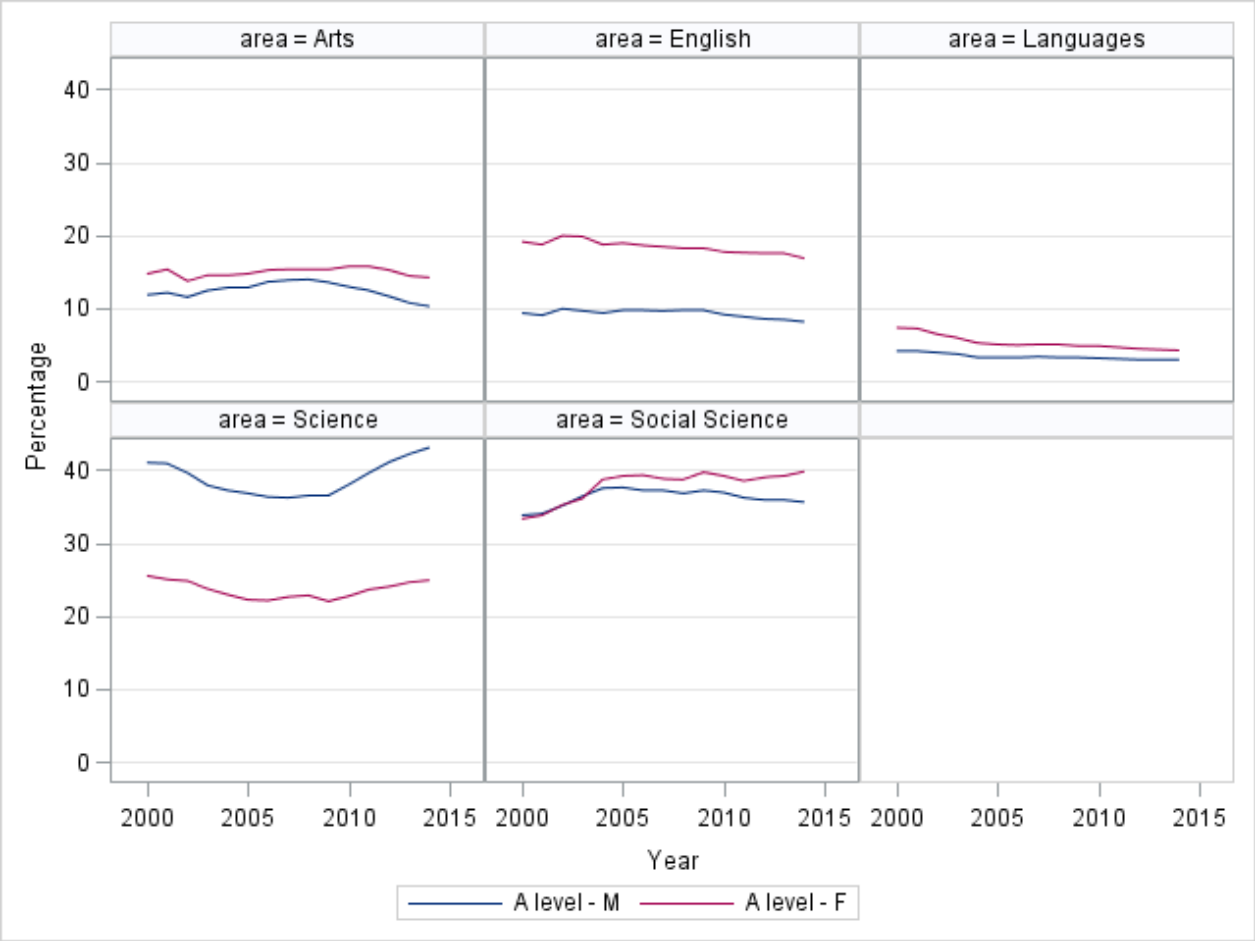


Figure 20: Percentage of A level entries by subject area, 2000–2014, by gender

The distribution of entries across subject areas is slightly different depending on eligibility for free school meals, as shown in Table 13. Students eligible for FSM were more likely to study social sciences, and less likely to study (physical) sciences.

Table 13: Distribution of A level entries across subject areas 2014, by gender and FSM eligibility

Subject area	Percentage of entries among				
	All students	Female students	Male students	FSM eligible students	FSM ineligible students
Arts	12.0	13.7	9.9	12.9	12.5
English	12.5	16.2	7.8	13.4	13.0
Languages	3.5	4.1	2.8	2.9	2.7
Science	31.8	24.0	41.6	27.9	31.2
Social Science	40.2	42.0	37.9	42.9	40.7

Subjects were then further grouped into three domains: Science and Mathematics, Arts and Languages, Social Science and Humanities (see Bell et al., 2005). Students who entered subjects in only one domain were classified as specialists, and students that entered for two of the domains were classified as partly mixed, while those entering subjects in all three were classified as mixed. This classification of students gives an indication of the breadth of their programmes. Analysis was restricted to students who took at least three A levels, and the

classifications were determined based firstly on their A levels only, and then also on their A and AS levels (excluding General Studies and Critical Thinking).

Figure 21 shows the breakdown of students according to breadth for each year. At A level, breadth changed little from 2000 to 2008, but since 2008 there has been a steady increase in the proportion of students with a specialist programme and a corresponding decrease in those with a mixed programme. These specialists are predominantly in the Science and Mathematics domain, an area which has seen increasing popularity recently.

When AS levels are included, the extra subject typically has had the effect of bringing more breadth to a student's programme, although this too has declined slightly since 2008. However, the effect of Curriculum 2000 is clearly visible in 2002. It is interesting to note that the breadth is increased through the AS, but there is little differential effect by subject area (as shown in Figure 19); so specialists (in terms of A levels) in area X, taking an additional AS in area Y, are largely counterbalanced by others taking an AS in area X.

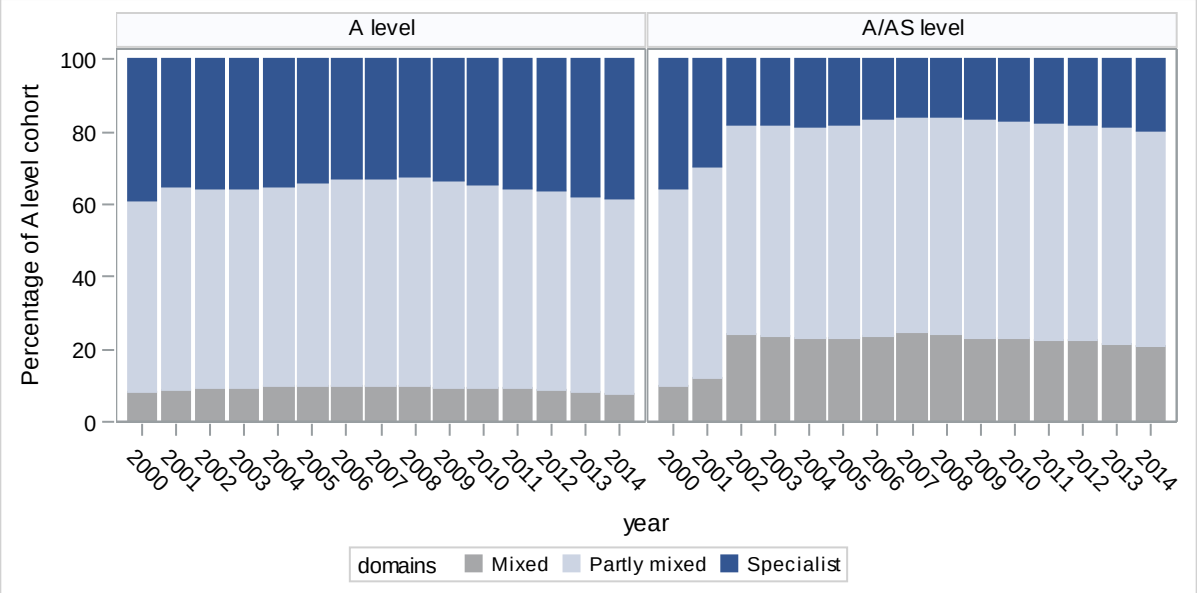


Figure 21: Breadth of students' programmes at A level, and A/AS level

Tables 14 and 15 show that male students and FSM eligible students were more likely (in 2014) to be following a specialist programme, and less likely to be studying a partly mixed programme.

Table 14: Breadth of students' programmes (A levels) by gender and FSM eligibility, 2014

	Percentage of students with this programme				
Programme	*All*	*Female*	*Male*	*FSM eligible*	*FSM ineligible*
Specialist	36.5	33.0	41.0	45.8	36.7
Partly mixed	55.0	58.0	51.1	48.5	54.9
Mixed	8.5	9.0	7.9	5.7	8.4

Table 15: Breadth of students' programmes (A/AS levels) by gender and FSM eligibility, 2014

	Percentage of students with this programme				
Programme	*All*	*Female*	*Male*	*FSM eligible*	*FSM ineligible*
Specialist	17.1	14.6	20.2	24.7	17.0
Partly mixed	60.1	61.3	58.6	58.4	60.1
Mixed	22.8	24.1	21.2	16.9	22.9

3.4.7 Forecast mix of linear/modular programme during transitional period

By making the assumption that A level subject choice patterns will remain at 2014 levels, we can forecast the likely volume of linear and modular A levels for the transitional period, for award in 2017 and 2018.

When reforming A levels, the government and Ofqual prioritised the high-entry subjects for first teaching in 2015. As a result, when considering the entries (Table 16) the majority will be in the new linear specifications from 2017. However, if instead we look at a student level (Table 17) a clear majority of students (71%) will be following a mixed programme. This is largely due to the popularity of Mathematics, which is not being reformed until 2017 first teaching, and is commonly taken alongside science A levels which are being implemented in 2015.

Table 16: Breakdown of projected A level entries in 2017 & 2018 by modular/linear

	2017		**2018**	
	N	*%*	*N*	*%*
Modular	292058	44.1	202581	30.6
Linear	369791	55.9	459268	69.4
All	661849	100.0	661849	100.0

Table 17: Projected programmes of students during transitional period, all

	2017		**2018**	
	N	*%*	*N*	*%*
Fully modular	25842	11.2	14251	6.2
Fully linear	42006	18.2	81186	35.1
Mixed	163341	70.7	135752	58.7
All	231189	100.0	231189	100.0

The higher popularity of Mathematics among male students may be the cause for the gender differences displayed in Table 18. It is apparent that, if subject choice patterns remain at 2014 levels, female students will be more likely to be studying a fully linear programme both in 2017 (23% females vs. 13% males) and 2018 (42% females vs. 27% males).

Tables 19 and 20 display the forecasts of linear, modular and mixed programmes that will be followed by students sitting their A levels in 2017 and 2018, breaking down candidates according to Free School Meal eligibility and type of school attended. Some interesting patterns are worth mentioning. Table 19, for example, highlights that students eligible for Free School Meals will be

more likely to follow a fully linear programme of study in the next years than those not eligible for FSM, though the difference is slightly less in 2018 than 2017. As for differences by school type, Table 20 clearly shows that candidates at independent and selective schools will be the least likely to follow a fully linear programme of study in 2017 (only 10% and 11% of students respectively). In the same year, 18% and 19% of students at sixth form colleges and comprehensive/academy schools will be sitting a fully linear combination of A level subjects, while students from secondary modern schools and FE/Tertiary colleges will be above 26%. This gap reduces notably in 2018 for independent school candidates, but it will remain for selective candidates.

Table 18: Programmes of students during transitional period, by gender

	2017				2018			
	Female		Male		Female		Male	
	N	%	N	%	N	%	N	%
Fully modular	11123	8.6	14719	14.4	5616	4.4	8635	8.4
Fully linear	28840	22.4	13166	12.9	54160	42.1	27026	26.4
Mixed	88784	69.0	74557	72.8	68971	53.6	66781	65.2
All	128747	100.0	102442	100.0	130891	100.0	102442	100.0

Table 19: Programmes of students during transitional period, by FSM eligibility

	2017				2018			
	FSM Eligible		FSM Ineligible		FSM Eligible		FSM Ineligible	
	N	%	N	%	N	%	N	%
Fully modular	1690	14.8	21268	11.3	1097	9.6	12162	6.5
Fully linear	2846	24.9	35700	19.0	4381	38.3	65341	34.8
Mixed	6891	60.3	130833	69.7	5949	52.1	110298	58.7
All	11427	100.0	187801	100.0	6900	100.0	187801	100.0

Table 20: Programmes of students during transitional period – subjects for first awarding in 2017, by school type

	2017											
	Independent		**Selective**		**Secondary Modern**		**Comprehensive/ Academy**		**Sixth Form College**		**FE/Tertiary college**	
	N	%	N	%	N	%	N	%	N	%	N	%
Fully modular	2690	9.0	311	3.7	385	19.2	15150	12.2	5617	11.3	1407	9.4
Fully linear	3053	10.2	896	10.7	525	26.2	23856	19.2	9085	18.3	4126	27.6
Mixed	24162	80.8	7163	85.6	1095	54.6	85158	68.6	34881	70.3	9426	63.0
All	29905	100.0	8370	100	2005	100.0	124164	100.0	49583	100.0	14959	100.0

Table 20 (ctd): Programmes of students during transitional period – subjects for first awarding in 2018, by school type

	2018											
	Independent		**Selective**		**Secondary Modern**		**Comprehensive/ Academy**		**Sixth Form College**		**FE/Tertiary college**	
	N	%	N	%	N	%	N	%	N	%	N	%
Fully modular	847	2.8	83	1.0	257	12.8	8675	7.0	3360	6.8	864	5.8
Fully linear	10951	36.6	2200	26.3	775	38.7	45867	36.9	14660	29.6	5895	39.4
Mixed	18107	60.5	6087	72.7	973	48.5	69622	56.1	31563	63.7	8200	54.8
All	29905	100.0	8370	100.0	2005	100.0	124164	100.0	49583	100.0	14959	100.0

3.5 A level and degree subject area comparison

In this section we present a comparison of A level subject uptake (from NPD data) with the number of entrants to undergraduate degrees (using HEFCE data) for selected subjects.

The HEFCE data is for students at English institutions, and therefore not necessarily those who have taken post-16 qualifications in England. Similarly, English students at universities in Scotland, Wales and Northern Ireland (or outside the UK) are not included. However, the mapping and grouping work that HEFCE have carried out makes this data ideal for comparing to A level uptake, and they do so themselves (using entry data from JCQ, rather than candidate-level data from the NPD as we have here) in their work on strategic and vulnerable subjects.

For simplicity we have not adjusted based on the size of the ONS cohort – we have shown raw numbers of students, and numbers relative to 2002/3, for each subject. Because there has been growth of the cohort over time, much of the overall growth in numbers is due to population trends, and future numbers will be expected to decline overall for the same reason. However, consideration of the raw numbers allows a more intuitive comparison of the actual numbers of students we are considering, and their flow from A levels to university. Additionally, any questions of viability of certain university subjects would also be affected by population trends.

When considering these graphs for particular subjects, the overall trends of undergraduate entrant numbers shown in Figure 3 should be borne in mind; in particular, the rise in numbers before 2011/12 (and particularly between 2006/07 and 2011/12), the large drop in 2012/13 (the first cohort of students who paid the higher fees) and a partial recovery in 2013/14.

In section 3.3 it was shown that one of the degree subject areas that has recently increased in popularity was ‘Psychology’. The uptake of A level Psychology has also increased since the introduction of Curriculum 2000 (Figure 16); furthermore, Psychology was one of the most popular AS subjects taken in combination with three A levels in 2014 (section 3.4.5). Figure 22 shows that the number of students taking A level Psychology in 2014 was 50% more than those in 2002, and there has been a similar increase in undergraduate entrants over the same period. However, A level Psychology grew more rapidly and then remained static with a slight decline recently, whereas undergraduate entrants have been growing more steadily; this growth has continued in 2013/14 which is not the case for some other subjects.

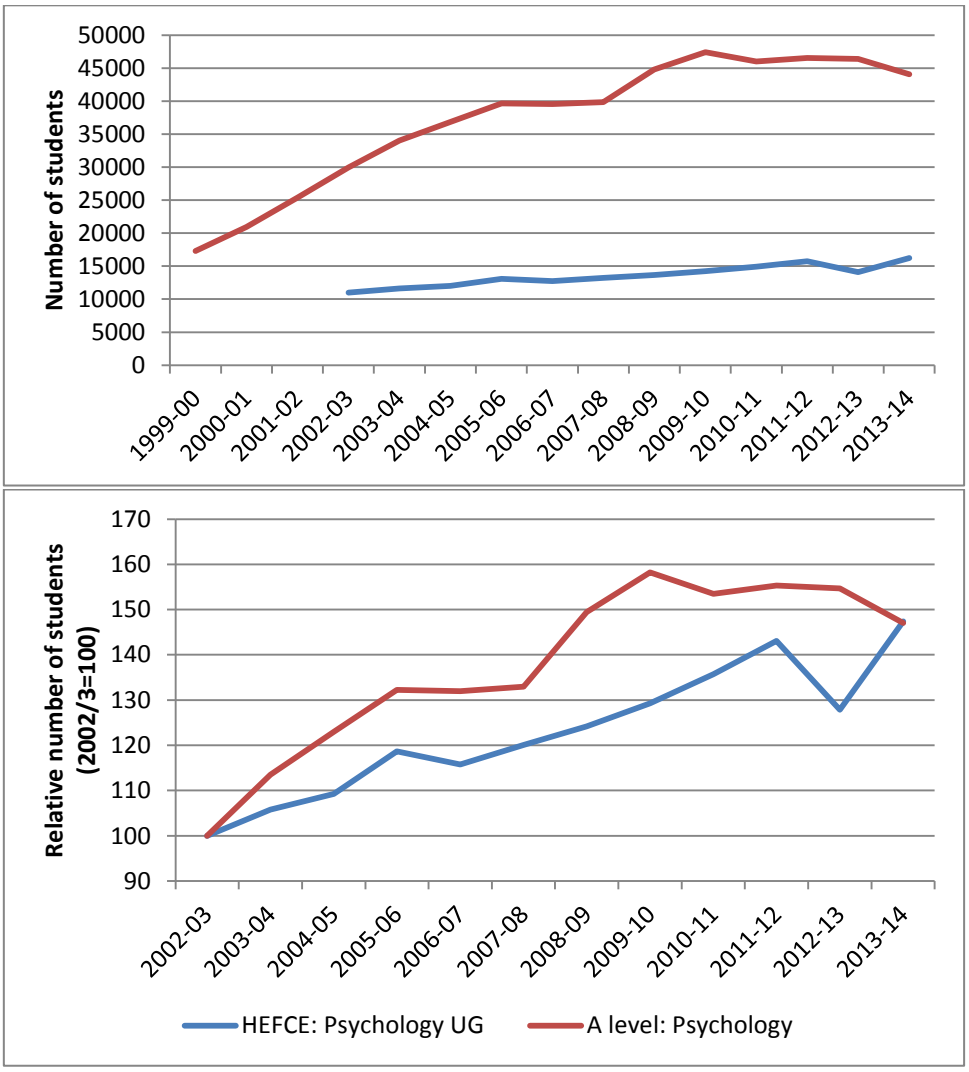


Figure 22: A level candidates and undergraduate entrants in Psychology: absolute and relative numbers

A completely different result is presented in Figure 23 with reference to the uptake of modern European languages at undergraduate level, and the most popular language A levels. There was an initial decline in undergraduate entrants in European languages between 2002/03 and 2003/04 but then numbers remained relatively stable; however, there was a heavy fall in 2012/13 and very little recovery the following year. The trend is not too dissimilar to that of French and German A level uptake, but Spanish A level has shown a different trend and risen steadily over the whole period.

Understanding the patterns of progression more would require disaggregating modern European language courses into distinct languages[26], but also considering progression on a candidate level (candidates might study one or more languages at A level) rather than simply numbers of entries.

[26] This is not always possible, as many HE language courses (for example Modern & Medieval Languages at the University of Cambridge) do not focus on just one language.

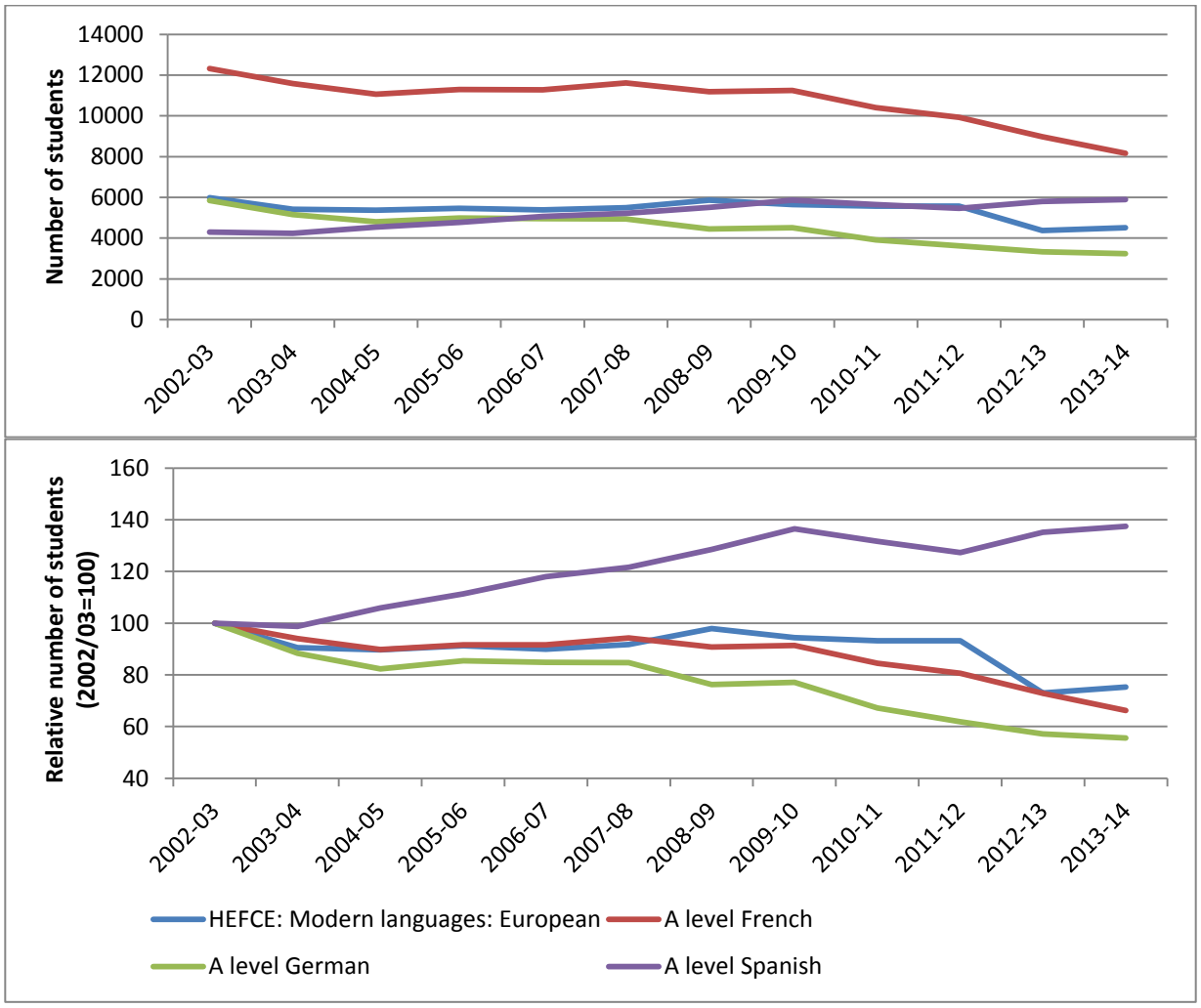


Figure 23: A level candidates and undergraduate entrants in modern European languages (absolute and relative numbers)

A weakness of relying on linkage between A level and degree subject uptake data is illustrated in Figure 24, which compares trends in A Level Computer Science/Computing, ICT and Applied ICT with undergraduate entrants in computing courses. The trend in uptake (in relative terms) is fairly similar in these qualifications, except that Applied ICT A level declined in popularity later than the other A levels. However, a glance at the raw numbers shows that we are not looking at the full picture here. In 2013/14, the total number of undergraduate entrants was 19540, while the total A level entry in these subjects was less than 14000. The gap is due to the high percentage of undergraduates on computer science courses entering with vocational qualifications (Vidal Rodeiro, Sutch & Zanini, 2013).

This illustrates that predicting effect of A level reform is not as simple as comparing overall numbers as we have done here, as different courses (even within a subject area) and universities require different qualifications. Some computing undergraduate courses in more technical areas (for example networking) are therefore not directly exposed to A level reform, whereas others will have perhaps a more mathematical emphasis and require academic qualifications.

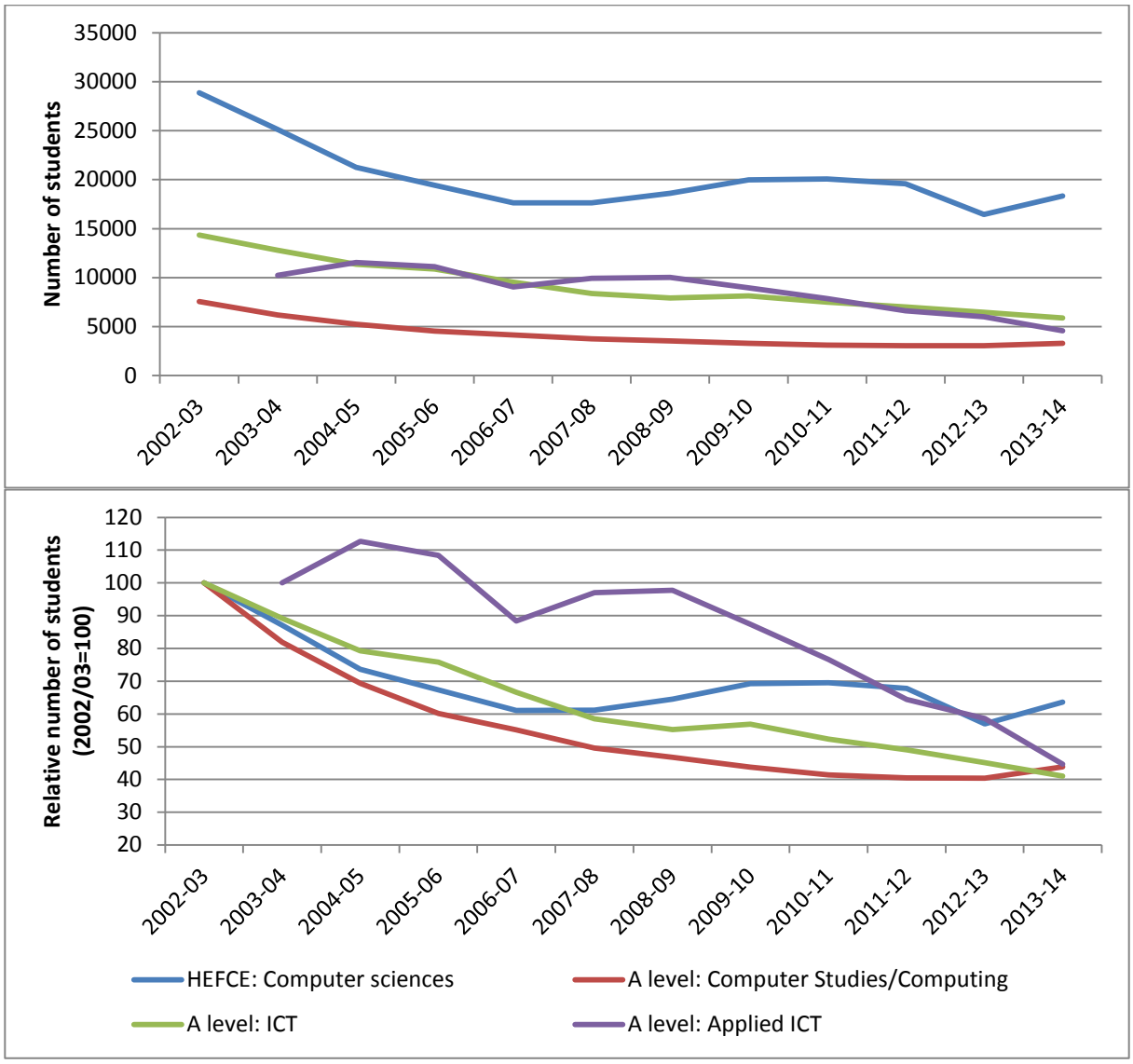


Figure 24: A level candidates and undergraduate entrants in computer science courses (absolute and relative numbers)

Figure 25 shows trends in History, Law and Politics undergraduate entrants, along with the corresponding A levels. First of all, the number of students taking A level Law is under half of those embarking on undergraduate study in the subject[27], whereas for History and Politics the reverse applies. The trend for A level Law is very unlike the other lines shown: after initial growth it peaked in 2008/09 and has since undergone a decline. The numbers of entrants to undergraduate Law courses have followed a similar trend to History A level numbers, although the peak in 2008/9 suggests some additional influence from A level Law.

Undergraduate entrants and A level entries have followed similar trends in each of History and Politics; however, it remains to be seen whether the decline in Government and Politics entries in 2014 will be reflected in student numbers for Politics courses.

[27] Indeed, admissions tutors for Law at some prestigious universities do not regard Law A level as beneficial; they prefer students who have not previously studied law so they can start their university course with a 'blank canvas' (Rose, 2011; Fazackerly and Chant, 2008)

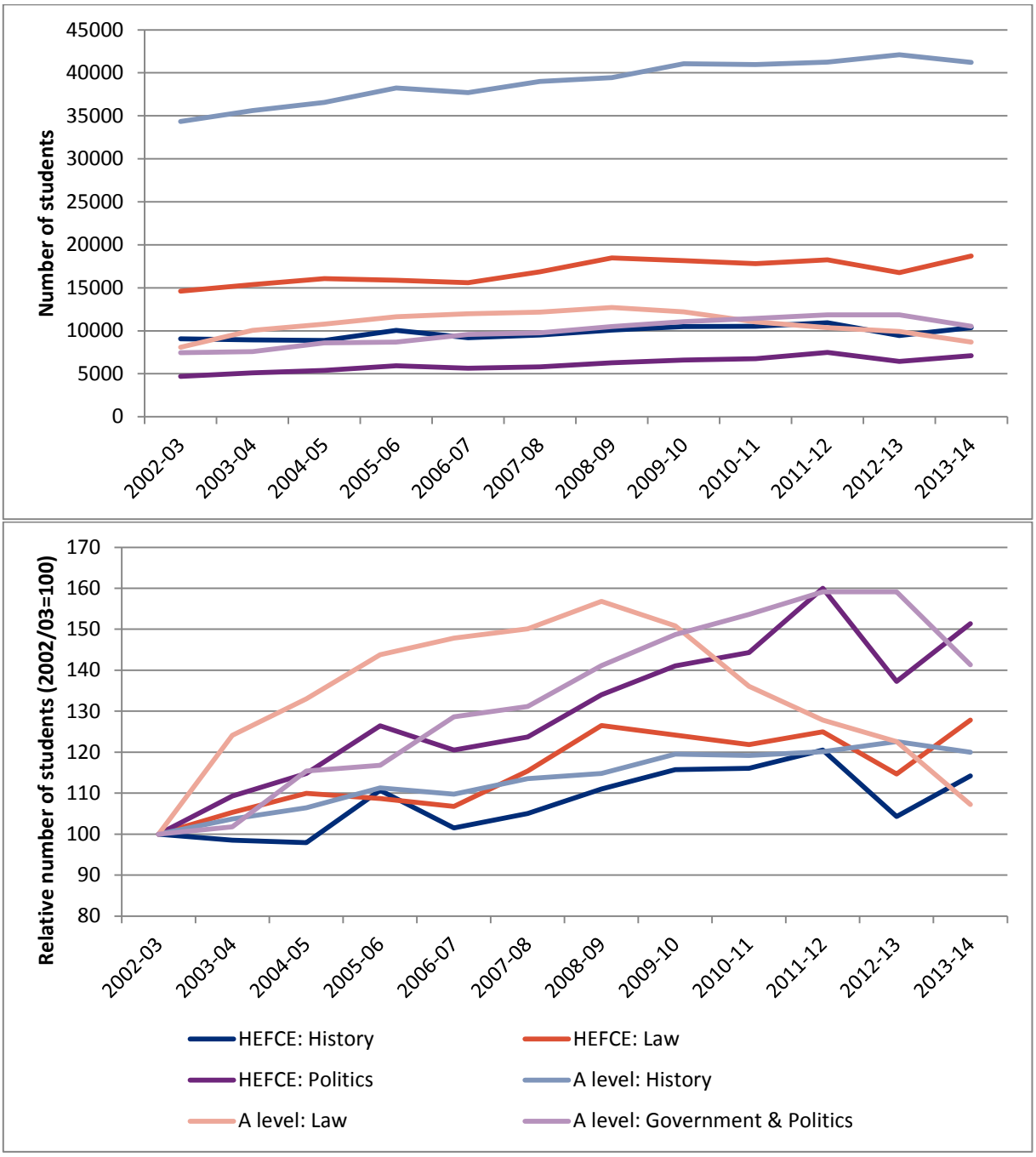


Figure 25: A level History candidates and undergraduate entrants in History, Politics and Law (absolute and relative numbers)

In section 3.4.5 it has been shown that the most common combinations of subjects taken at A level include the three sciences (Biology, Chemistry, Physics) and Mathematics. For candidates taking these subjects at A level there are many different university courses to progress to. Figure 26 presents a comparison of trends in many common scientific degree courses[28] and shows that all these degree areas have been expanding over recent years. There is a close correspondence between the trends in A level and undergraduate entrants in each of Mathematics and Chemistry; however, in Biology and Physics undergraduate entrants have risen more rapidly than A level entries.

[28] There are many other relevant degree courses such as Medicine and Dentistry, which are not shown here for simplicity.

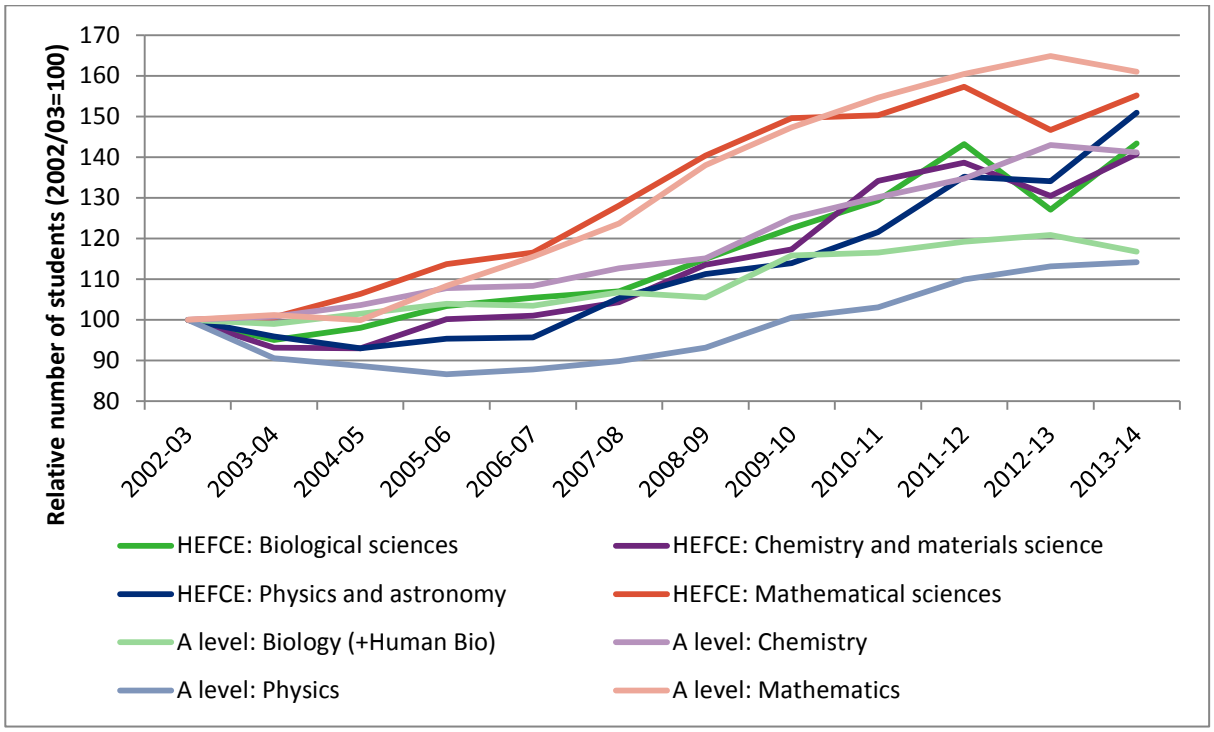


Figure 26: Relative numbers of A level candidates and undergraduate entrants in selected scientific subjects

This analysis has shown that in many cases there is a close correspondence between trends in A levels and degree subject entrants. However, there is not an obvious one-year lag visible in the data (that is, there is not a simple relationship between the number of A level students in one year and the number of undergraduate entrants in the next year). This is presumably because the supply of suitably qualified students nationally is not so critically low that numbers of undergraduates in a subject are crucially dependent on A level uptake, and also that uptake at university level is dependent on similar public attitudes and government initiatives to uptake at A level.

In most subjects, the number of degree entrants is much lower than the number of students with the most obviously corresponding A level. At first sight, then, a drop in the A level entry could be afforded, especially if it were concentrated among less able candidates, who would not be expected to progress to a degree in the subject area. However, if students no longer (typically) have the opportunity to study four subjects in Year 12, and then exercise an informed choice for their final A level subjects, patterns of A level subject uptake may change.

Our analysis is simplistic and has several limitations, which we have illustrated through examples. A more extensive and robust analysis would require information as to what A levels *and other qualifications* are required, or desirable, for a particular degree course (rather than the qualifications that the students enrolling on the course happen to have). This could come from admissions requirements (although these would naturally give less information on desirable qualifications which are not requirements, and universities that are in a position to select from a pool of highly qualified applicants may specify admissions requirements that are in excess of what is actually required) or from subject experts. This would allow us to ascertain how exposed particular university subjects are to a reduction in numbers of A level students. Allowance would need to be made for different courses within a subject area (for example the variety of computing courses with different emphases) and the institution type. However, an analysis of this sort would require comprehensive information on the university admissions process, and it is unclear how much data could be obtained from UCAS (and at what cost).

Alternatively, an analysis at the level of individual students (using linked NPD–HESA data) may give some information, particularly for subjects which are not directly related to a single A level subject, or draw on abilities in a range of subjects: for example, of those students studying History A level, finding the relative numbers of those going on to study Law and History.

3.6 Extra analyses

3.6.1 All-linear programmes

The current A level reforms will result in linear qualifications. However, there is nothing to stop centres and candidates entering the current A levels in a linear fashion, taking all units at the end of the course. It is of interest to establish how much this occurs in practice.

This was previously investigated for mathematics A level: QCA commissioned some analysis from Cambridge Assessment about OCR A level maths qualifications in 2004, reported in Matthews & Pepper (2006, pp. 30–32). Very few candidates took a 'strict linear' route (where all assessment occurred at the final session), and they were concentrated among selective and independent schools. The proportion of A grades gained by these candidates was significantly lower than average.

This question cannot be answered using the National Pupil Database, which records results and dates for whole qualifications (AS and A levels) but not for individual units. As a result, it is necessary to restrict our attention to OCR specifications only, and use internal data.

For each year from 2011 to 2014, and each OCR A level specification, we obtained:

- The number of students certificating the A level in the summer of each year
- The number of students taking all units in the same session as the certification (that is, for those awarded an A level in summer 2014, they had taken all of the units in June 2014).

We considered the timing of the first sitting of each unit, rather than any resits, so this gives an indication of how many students *planned* to sit all their units in a linear fashion at the end of the course[29]. Candidates taking two AS levels in June of Year 12 and then resitting these in June the following year would therefore not be included.

We excluded all specifications in mathematics and further mathematics from the main part of our analysis, because there are many possible routes for gaining these qualifications and the rules for aggregation are complex. However, a simpler analysis of these specifications is presented at the end of the section.

Table 21 shows a summary of the proportion of A level entries that were linear from 2011 to 2014. Although it had been declining slightly, the proportion increased markedly in 2014. This was the first year with no January session, which would have resulted in a change in behaviour: most obviously, students taking a whole A level course in one year only had one opportunity to sit units.

[29] However, students planning to sit all their units in the final session, subsequently deciding not to certificate the A level and resitting one or more units in the following sessions would not be included.

Table 21: OCR A level - change in 'linear' A level entries 2011–2014

Session	Number of A level entries	Number of 'linear' A levels	% linear
June 2011	198112	2451	1.24
June 2012	192514	2229	1.16
June 2013	182866	1996	1.09
June 2014	177475	4746	2.67

Table 22 shows results at an individual specification level (for the 20 specifications with the highest proportion of linear entries in 2014). There has been a growth in the percentage of students taking a linear route in most subjects (in line with Table 21).

Some specifications had particularly high percentages of linear entry: General Studies, Critical Thinking and French are at the top of the list. The first two are likely to be because they are extra subjects sometimes taught in a single year. For French, there might be thought to be a benefit in language being assessed linearly. However, German and Spanish do not appear in a particularly high position on the list.

Although these results are from one awarding body only and may not be representative of the national picture, these percentages are much lower than the proportions of A level candidates in each subject who do not certificate their AS levels (in Appendix B). This suggests that the primary reason for the AS levels not being certificated is *not* that the necessary units have not been taken by the summer of Year 12, but rather because of a policy decision by the centre not to cash them in; for example they may believe that declaring disappointing AS grades in advance of unit resits may harm their students' university applications.

In addition, there is very little change in the proportions of A levels taken linearly between 2011 and 2012 (when state-funded schools and colleges were newly required to request certification for students' AS levels in order to receive funding), which provides further evidence that 'undercertification' of AS levels is not on the whole related to when assessments were actually taken.

Table 22: OCR A level specifications with highest proportion of candidates taking all units in certification session (excluding Mathematics)

Specification		Percentage of candidates taking all units in certification session				Increase 2013 to 2014 (p. p.)	Number of entries 2014
Code	Subject	2011	2012	2013	2014		
H479	General Studies	4.8	4.6	1.9	23.8	+21.9	7412
H452	Critical Thinking	2.9	0.3	1.1	8.8	+7.7	512
H475	French	4.0	2.9	3.2	6.4	+3.2	844
H575	Science (Applied)	1.0	0.5	0.7	4.8	+4.1	1352
H503	Health & Social Care (Applied)	0.9	0.6	0.5	3.4	+2.9	2767
H487	Geology	0.0	1.3	0.8	2.7	+1.9	1330
H441	Classical Civilisation	2.6	2.7	3.1	2.4	-0.8	1433
H506	History A	1.6	1.2	1.3	2.1	+0.8	10083
H563	Art & Design	1.8	2.0	1.6	2.0	+0.4	2133
H423	Human Biology	0.0	0.1	0.0	1.9	+1.9	727
H439	Latin	1.8	3.1	1.2	1.9	+0.7	1322
H581	Sociology	0.3	0.1	0.1	1.6	+1.4	4043
H548	Performance Studies	0.1	0.2	0.0	1.5	+1.5	660
H471	English Literature	1.3	0.6	1.7	1.5	-0.2	10593
H430	Business Studies	0.1	0.0	0.0	1.4	+1.3	3068
H572	Religious Studies	1.0	1.2	1.3	1.4	+0.2	9456
H534	Law	0.1	0.1	0.2	1.3	+1.1	3629
H434	Chemistry A	0.3	0.4	0.3	1.3	+1.0	20655
H558	Physics A	0.0	0.1	0.0	1.1	+1.1	9204
H461	Economics	0.4	0.1	0.1	1.1	+1.0	6872

Table 23 shows the change in linear A level entries by centre type from 2011 to 2014. The centres with the largest proportion of linear entries have been for the 'Other' centre type, by a large margin. This category includes overseas centres, and tutorial colleges which specialise in fast-track entry, but the number of candidates is relatively small. Concentrating instead on the major centre types, most saw a large rise in the proportion of all-linear entries from 2013 to 2014, probably due to the removal of the January session. The largest increase was for sixth form colleges, which in 2014 had a higher proportion of all-linear entries than independent schools. However, this can be mostly attributed to a change in the pattern of entries for General Studies for a small number of sixth form colleges with very large entries (several hundred candidates each). It seems likely that these candidates take the A level in one year.

Table 23: Change in 'linear' A level entries 2011–2014 by centre type

Centre type	Percentage of candidates taking all units in certification session				Increase 2013 to 2014 (p. p.)	Number of entries 2014
	2011	2012	2013	2014		
Other	10.5	15.4	14.4	13.9	-0.5	2204
Sixth Form College	1.4	1.1	0.4	5.2	4.8	38595
Independent	2.0	1.8	2.2	3.2	1.0	28390
FE/Tertiary	0.8	0.6	0.8	2.8	2.0	11360
Comprehensive/Academy	0.9	0.8	0.8	1.3	0.5	88162
Secondary Modern	0.5	0.6	0.5	1.3	0.8	1759
Secondary Selective	0.3	0.2	0.3	0.3	-0.0	7005

For students taking Mathematics specifications[30], we looked only at the number of units taken in the certification session, and considered the percentage of candidates taking at least six (a full A level). We did not attempt to impose the aggregation rules which determine which units are allocated to which qualification.

Results are presented in Table 24. The first row shows candidates certificating Mathematics A level only, with no Further Mathematics A level (they may have taken more than six units altogether and for example obtained an AS in Further Mathematics). The second and third rows both concern candidates with Mathematics and Further Mathematics; the difference is that we are looking at the number of units sat in the session at which the relevant A level was certificated. In practice, of those candidates taking Further Maths, 90.1% certified their Mathematics and Further Mathematics A levels in the same session. That is, it is *not* generally the case (for example) that candidates certificate the Mathematics A level in Year 12 and the Further Mathematics A level in Year 13. Hence the figures in the second and third rows of the table are very similar.

There was a marked increase in students taking A level Mathematics in a linear form in 2014, presumably due to the removal of the January session. It had previously been a small minority of candidates (under 1%) that took this route.

For students taking two Mathematics A levels, the vast majority of them took at least six units (of the twelve total) in their final certification session in 2014. This had increased dramatically since 2013, when fewer than 10% of candidates did this. This shows that while candidates taking double Mathematics were previously able to spread out their units over the January and June sessions in Year 13, now they generally take them all in June. (Incidentally, the proportion of Further Mathematics candidates taking at least 12 of their units in June 2014 was only 0.26%, suggesting that there are hardly any instances of true linear entry in double Mathematics.)

[30] We have combined results from all OCR Mathematics and Further Mathematics specifications.

Table 24: Change in 'linear' A level entries in Mathematics

Specification considered	Percentage of candidates taking 6+ units in certification session				Increase 2013 to 2014 (p. p.)	Number of entries 2014
	2011	2012	2013	2014		
Mathematics (student not taking Further Mathematics)	0.5	0.8	0.7	5.4	+4.7	17358
Mathematics (student also taking Further Mathematics)	7.5	8.0	9.6	87.6	+78.0	3463
Further Mathematics	6.4	7.2	8.6	85.9	+77.3	3906

This analysis has shown that the move towards linear assessment has already started in a small way, with an increased number of students taking all their A level unit assessments in the same session in 2014. This is likely to be due to the removal of the January session with effect from that year. It is most common in General Studies, Critical Thinking and French; and among students at independent schools.

On the strength of this analysis we have also demonstrated that the reason that some A level students (concentrated in independent schools) have not previously certificated their AS levels is not, in general, because they have not taken the necessary unit assessments by the end of Year 12; rather, it appears to be due to centre policy not to request aggregation.

3.6.2 Provision of Advanced Supplementary Levels in 2000

Given the relatively low uptake of Advanced Supplementary levels (as discussed in sections 2.4 and 3.4), this section considers the provision of these qualifications in 2000. If they were offered only by certain types of schools and colleges, this may have implications for the post-2015 standalone AS qualification. The year 2000 was used because Advanced Supplementary entries declined considerably in 2001, and it appears that some specifications were withdrawn early (as discussed in section 3.4.1).

The data used was the Sixteen Plus Eighteen Plus database, as described in section 3.2. As with the Cambridge Assessment series of statistical reports on provision, we make the assumption that if *at least one candidate* at a centre takes an AS level in a subject, then the school/college can be regarded as offering it. This does not make allowance for centres offering a qualification but no students deciding to opt for it.

Note that we cannot infer anything from this data on how schools and colleges delivered their AS and A levels, in particular whether courses were co-taught.

Table 25 shows the average number of A level and AS level subjects offered by centres in 2000. The overall average number of A level subjects offered is around four times higher than the number of AS subjects offered, and there is a considerable gap for each centre type. The centres offering the largest number of AS subjects on average were sixth form and FE colleges.

Table 25: Average A/AS subjects offered by centres, 2000

Centre type	Number of centres	Mean A level subjects offered	Mean AS level subjects offered
Independent	596	17.1	4.2
Selective	165	20.7	5.2
Secondary modern	75	7.9	1.7
Comprehensive	1591	16.3	3.5
Sixth form college	137	29.1	12.9
FE/Tertiary college	387	20.8	7.8
Other	178	6.6	1.5
Total	**3138**	**16.2**	**4.1**

Figure 27 shows a comparison between the number of A and AS levels offered by each centre[31]: this is effectively a breakdown of Table 25 by individual centre. In almost all cases, centres offered fewer AS levels than A level subjects (the red dotted diagonal line indicates the line of equality). Few centres offered more than ten subjects at AS level. Again, it is evident that sixth form colleges and FE/Tertiary colleges offered a particularly wide range of subjects, both at A level and AS level.

[31] To avoid obscuring the data through overplotting in Figures 27, 28 and 29 (because many centres offered exactly the same number of A and AS levels as one another), the points have been jittered and also made semi-transparent.

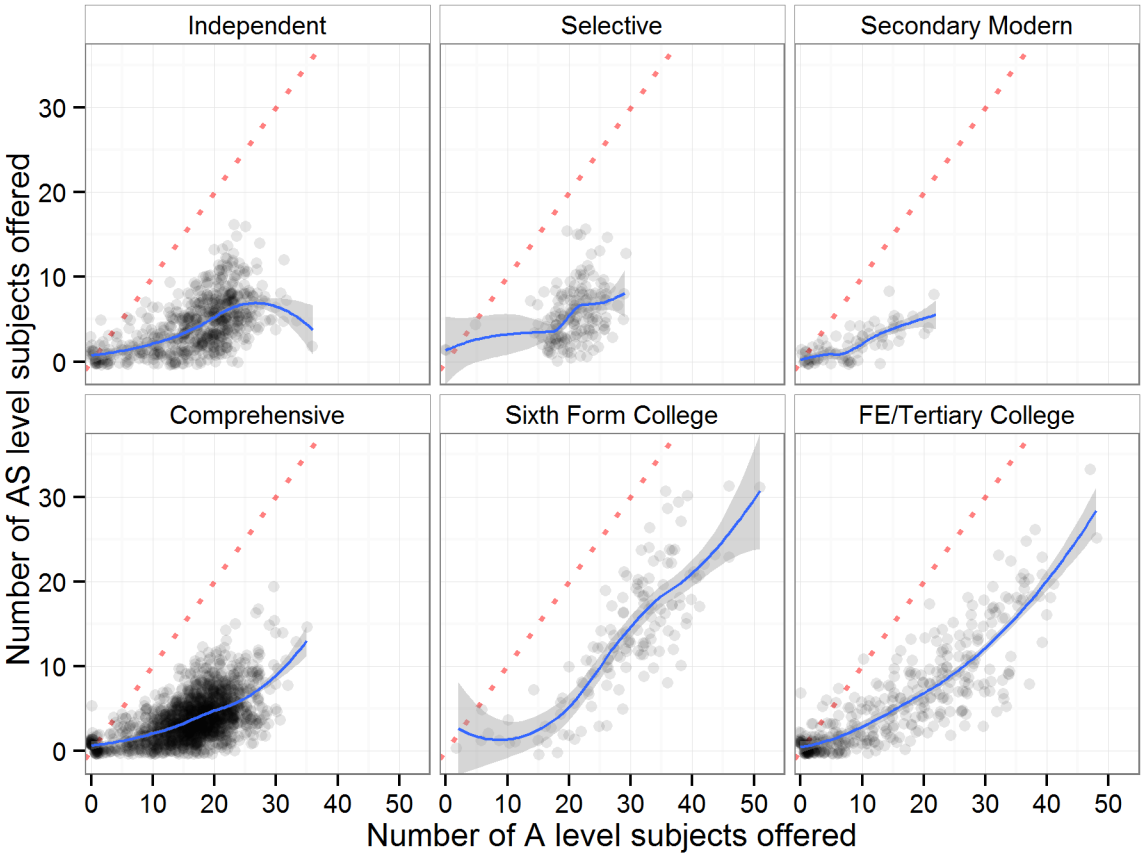


Figure 27: Comparison of number of AS and A level subjects offered by each centre

Figure 28 shows the relationship between the number of students in the Sixteen Plus/Eighteen Plus database in Year 13 in 2000, and the provision of subjects at both A and AS level for each centre type. Most schools have fewer than 200 students per year, while FE/Tertiary and particularly sixth form colleges typically had several hundred students. The relationship between number of students and subject offer seems consistent between centre types: a sharp increase over the range 0–200 students and then a levelling off. This suggests the ability of the school or college to offer these qualifications is largely due to student numbers.

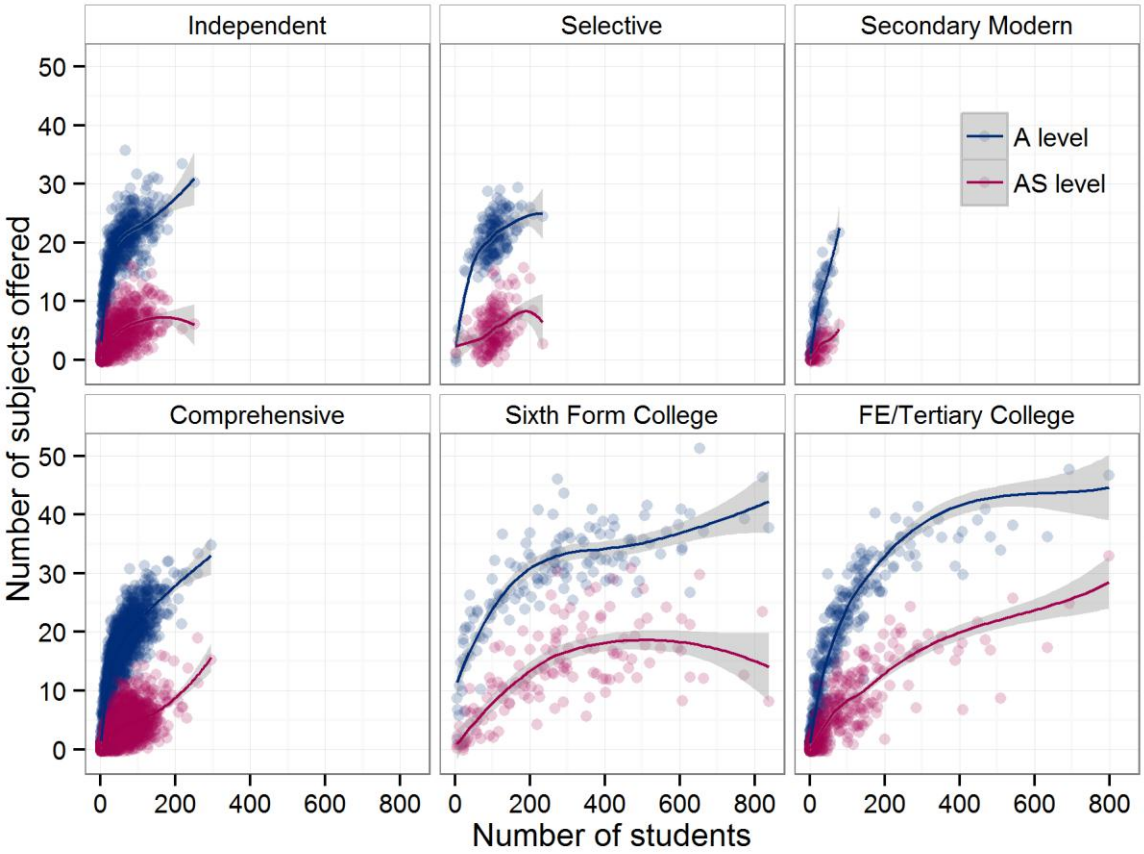


Figure 28: Comparison of number of students and number of A/AS subjects offered, 2000

Figure 29 shows the relationship between the provision and uptake of AS levels in 2000: more precisely, the number of AS levels offered by each centre, and the percentage of students taking the most common AS for each centre. In most school types there was an increasing relationship between the number of subjects offered and the uptake of AS levels. This relationship was strongest in selective schools and sixth form colleges. However, in other school types there was wide variation in the uptake of AS levels.

Interestingly there are some points at the very top left of each centre type sub-plot: where the centre offered only one or two AS levels, but all students took one of these qualifications. There were 20 centres (with at least 5 students) where 100% of students took an AS level. We investigated the subject with the highest uptake in these cases. Predominantly it was General Studies, especially for the centres with the highest number of students: for example, a grammar school with all 169 students taking General Studies AS level. Another subject featured was Religious Studies (for a small independent school), perhaps due to the school ethos.

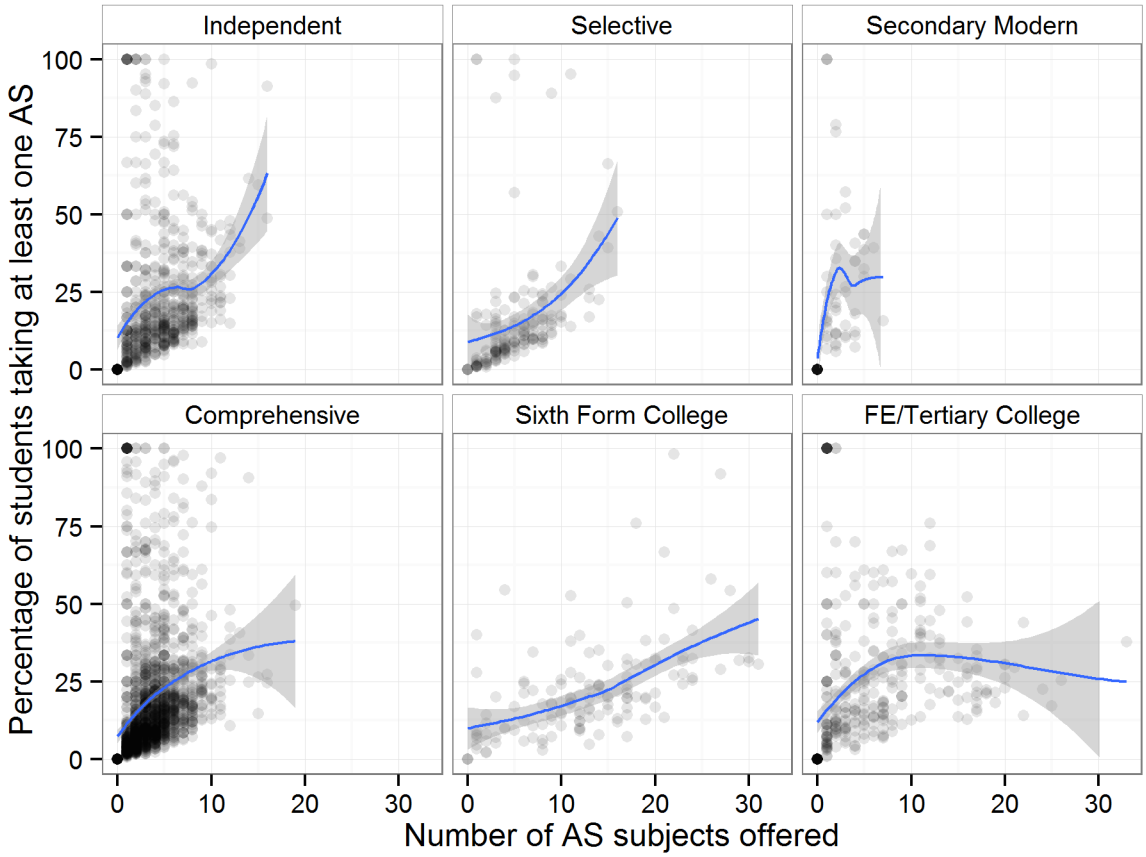


Figure 29: Relationship between provision and uptake of AS levels

Table 26 shows the subject-level figures on provision, ordered by the popularity of AS level. Mathematics was most popular, with nearly half of centres offering it. The subjects that were disproportionately popular at AS, compared to their A level popularity, were Further Mathematics, Psychology and ICT. The 'pure' & 'applied' mathematics specifications are likely to be artefacts of certain modular Mathematics specifications.

Table 26: Provision of subjects at A and AS level, 2000

Subject	Percentage of centres offering at AS	Percentage of centres offering at A Level
Mathematics	46.4	81.7
Biology	23.5	78.9
Mathematics (Further)	23.4	33.8
Physics	19.3	74.4
Chemistry	18.1	76.9
Psychology	16.5	36.2
French	16.0	65.6
Sociology	14.2	44.5
ICT	13.6	14.4
Religious Studies	13.1	34.1
General Studies	12.7	49.9
Art & Design	12.1	64.2
Business Studies	12.0	55.8
Maths (Statistics)	11.9	1.7
Mathematics (Pure)	11.0	4.3
German	10.2	49.7
Music	9.7	43.8
Geography	7.8	73.0
Computer Studies/Computing	7.2	27.6
Government and Politics	7.2	23.9

This analysis has shown that centres offered far fewer subjects at Advanced Supplementary level than in A level in 2000. In some centres, only a few subjects were offered but these appeared to be compulsory (most commonly General Studies). In general, the number of subjects offered increased for larger centres, presumably due to viability: accordingly sixth form and FE/Tertiary colleges were in a position to offer more AS subjects.

As stated above, we cannot infer whether the centres co-taught their A and AS level groups from the data we have. Separate A and AS groups would tend to be more viable for colleges with larger numbers, and involve fewer downsides. However, even for co-teaching, it may not be worth the burden of offering and timetabling courses, entering students for exams and the associated administration, for the small number of students likely to take advantage of them. We might expect to see a similar dependency on centre size for the post-2015 AS levels.

3.7 Conclusions

The implementation of Curriculum 2000 resulted in an increase in the number of qualifications studied by A level students, due to the 'fourth AS'. However, the proportion of 18 year olds studying A levels has not risen greatly.

The most noticeable trend is the reduction in popularity of General Studies and Critical Thinking. General Studies peaked in popularity in the 1990s as an A level, and after Curriculum 2000, many centres switched to offer it as an AS level. However, both A and AS level General Studies are now in decline. Critical Thinking, a new AS level introduced as part of Curriculum 2000, peaked in the mid 2000s but has also been declining.

Although in the early 2000s there were a variety of configurations of A & AS levels in use by centres and candidates, the 3A+1AS model has become increasingly dominant and now 40% of the A level cohort[32] have studied in this configuration. Underlying this trend is the decline of General Studies and Critical Thinking: previously schools and colleges used a variety of models to accommodate these as 'add-ons'. Over recent years, there has been a convergence to the 3A+1AS model.

Since 2008 there has been growth of the uptake in science A levels, at the expense of English, languages, and arts subjects. Looking at an individual subject level, the 'winners' have been Mathematics (including Further Mathematics), the three sciences, Religious Studies and Psychology (although the increase in Psychology has levelled out recently). As well as General Studies, the 'losers' have been English Literature, Business Studies, French and German. However, the fourth AS has provided a boost for some of these subjects in terms of *uptake beyond GCSE*.

Studying an extra subject (typically) as an AS has injected some additional breadth into students' programmes, compared with the situation before 2001. However, there was little change to the breadth of *A level* programmes. The latest trend is that breadth has been declining since 2008: students are increasingly choosing programmes consisting entirely of A/AS levels in sciences and Mathematics.

Entries to Applied A levels (formerly VCE A levels) have been declining over the period. Under the current reforms, all but one of these subjects (Health and Social Care) will be discontinued. Students wishing to study these subjects in future may turn instead to more vocational qualifications.

We have presented some simple analysis comparing uptake at A level and entry to undergraduate courses in related areas. Trends are on the face of it similar, but there are important limitations to the analysis presented. To gain a truer picture of the risks posed by A level reform to uptake of specific university subjects would require work to understand admissions requirements for various subjects and courses (including for qualifications other than A levels), or the use of candidate level data.

A small number of students (based on our analysis of the OCR data) currently take their A levels in an all-linear manner, taking all units in the same session as they certify the A level. This is concentrated among certain subjects (particularly General Studies) and centre types (independent schools, as there is no need for them to certificate the AS for funding purposes). The frequency of doing this has roughly doubled from 2013 to 2014, presumably due to the removal of the January session. This means that all A levels taken over one year are effectively linear already.

Based on 2014 subject trend patterns we would expect the majority of A level entries in 2017 (that is, for the courses first taught in September 2015) to be linear. This is because Ofqual has

[32] That is, students with at least one A level.

prioritised the high-entry subjects for redevelopment. However, if instead we look at a student level, a clear majority of students (71%) will be following a mixed programme of modular and linear A levels. This is largely due to the popularity of Mathematics, which is not being reformed until 2017 first teaching, and is commonly taken alongside science A levels which are being implemented in 2015. It is striking that the groups of students who reported that they were least comfortable with the reforms (female students, and those from more deprived socioeconomic backgrounds) will be plunged in soonest.

Our investigation into the provision and uptake of the Advanced Supplementary level in 2000 revealed that schools and colleges offered fewer subjects at AS than at A level. Large institutions such as sixth form colleges and FE colleges offered more subjects at AS level (and also at A level), while some schools offered only a few subjects at AS but apparently required students to take an AS in General Studies. This may be reflected in future patterns of provision and uptake for the new standalone AS, once all subjects have been converted to linear specifications.

4 Combinations of qualifications

4.1 Introduction

This report supplements the existing statistics report looking at the uptake of different types of level 3 qualifications in 2014 (Gill, 2015b). As with the existing statistics report, uptake is defined as the percentage of key stage 5 students taking a particular combination of qualifications or a particular subject. The specific focus of this section is on:

- the combinations of qualifications taken by students at Key Stage 5,
- how the combinations of qualifications change according to gender, prior attainment, deprivation and school type,
- which A and AS level subjects are taken by those students that also make use of other qualifications, and
- how the A and AS level subjects taken by such students vary according to their background characteristics.

4.2 Data

The data for these analyses were taken from the National Pupil Database (NPD). This is a database held by the Department for Education, consisting of results for all students in all qualifications and subjects in schools and colleges in England. The Key Stage 5 (KS5) extract of the NPD was used, consisting of all students who were at the end of KS5 in 2014 (i.e. in year 13).

Only students who had taken any qualifications of equivalent (or greater) size to an A level are included in this analysis. (Thus students with only AS levels, for example, are excluded.) We have also removed AS levels held by a student in addition to an A level in the same subject.

It is of interest to investigate differences between different types of school, so most of the analyses were broken down into the following school types: comprehensive, academy[33], FE/tertiary college, grammar, independent, secondary modern and sixth form college. A table providing a breakdown of students according to these school types is provided in Gill (2015b).

4.2.1 Prior attainment

Students were classified by their attainment at GCSE. GCSE grades were converted into scores (A* = 8, A= 7, B= 6 etc) and a mean GCSE was calculated for each student, which was then used to divide them up into three approximately equally sized attainment groups: low, medium and high. Table 27 presents the number in each group as well as the mean, minimum and maximum value of mean GCSE for each group. There was a small amount of missing data for this measure, with about 3% of students having no GCSEs recorded in the NPD.

[33] Including other autonomous schools such as free schools.

Table 27: Key stage 5 students by prior attainment

Prior attainment group	Number of students	Minimum	Maximum	Mean
Low	149,577	0.0	5.2	4.5
Medium	123,230	5.2	6.2	5.7
High	127,702	6.2	8.0	6.9

4.2.2 Deprivation level

The level of deprivation that a student experiences was measured by the Income Deprivation Affecting Children Index (IDACI). This is a measure of the percentage of children in a very small geographical area (Lower Layer Super Output Area or LSOA) who live in families that are income deprived. It varies between 0 and 1, with 0 representing minimum deprivation and 1 maximum deprivation. It should be noted that in the initial data set there was a significant amount of missing data for this measure as IDACI is not recorded for key stage 5 students unless they attend a maintained school (as opposed to a college or an independent school) during Key Stage 5. For this reason, wherever possible missing values for IDACI were imputed using values from the 2012 NPD Key Stage 4 data set for the same set of pupils. (This is the same approach used with the Free School Meals eligibility indicator in section 3.4.) Even after imputing these values, 14% of students had no record. Students who did have a measure of deprivation were divided up into three equally sized groups. Table 28 presents the number of students and the mean, minimum and maximum IDACI values in each group.

Table 28: Key Stage 5 students by deprivation level

Deprivation Group	Number of students	Minimum	Maximum	Mean
Low	126,412	0.00	0.07	0.03
Medium	114,289	0.07	0.20	0.12
High	115,443	0.20	0.99	0.37

4.2.3 Gender

Table 29 shows the numbers and percentages of students of each gender included in analysis.

Table 29: Key Stage 5 students by gender

Gender	Number of students	Percentage
Female	217,074	52.6
Male	195,408	47.4

4.3 Results

4.3.1 Pairwise combinations

In order to demonstrate the combinations of qualifications held by KS5 students, Table 30 shows the numbers of students holding each type of qualification and pairwise combinations with various types of A/AS level. In this table, and the rest of the analysis presented in this section, we have separated out Applied A/AS levels, to show whether they are more often combined with other qualifications than other A levels. However, *unlike* the rest of the analysis in this section, we have not restricted this table to candidates who have taken at least one A level sized qualification.

Each row corresponds to a separate qualification, and the columns represent:

- The total number of students holding one or more of these qualifications (in any subject)
- The proportion of students holding this qualification who hold *only this qualification and no others*
- The proportion of students holding this qualification who also hold various types of A/AS level
- The proportion of students holding each of various types of A/AS level who also hold this qualification

Further details of the qualifications are given in Appendix C.

From this table we can see that candidates for most qualifications are usually taking A/AS levels as well. The exceptions are large vocational qualifications, and the International Baccalaureate, designed to be a full programme, where the majority of candidates take no other qualifications

In most cases, proportions of students taking combinations with A levels are similar to AS levels. For the academic qualifications (Pre-U and Extended Project) the percentage on the left for AS level is slightly lower than that for A level, because not all of the students taking A levels take an extra AS. However, for some vocational qualifications (all BTEC qualifications, OCR Cambridge Technicals and OCR Nationals), the AS is more popular. This is evidence that the AS is currently used by students not doing A levels to supplement a more vocational programme. It is not possible to determine whether the AS was the intended outcome or whether the student actually intended to study a full A level but dropped the subject after achieving an AS.

The numbers in the right hand columns show that only a small proportion of A level students hold other qualifications. The most popular are the Extended Project qualification (held by 13.2% of A level students) and the BTEC Diploma (held by 11.8% of A level students). For the OCR Technicals and Nationals, BTEC qualifications and VRQs, a higher proportion of students with applied A levels hold these than is the case for the non-applied A levels. This suggests that applied A levels are serving as a halfway house between A levels and vocational qualifications, although interestingly fewer (non-applied) A level students take applied A levels than take BTECs.

There are some very popular combinations in relative terms – over half of students with a double Applied AS level also hold a BTEC Diploma. However, the numbers are small (only 649 students had the applied AS qualification), can be influenced by just a few centres, and this is likely to relate to a certain subject in particular.

Table 30: Pairwise combinations of A/AS levels and other subjects

Qualification	Total number	This qual only	Percentage of students with qualification in this row who also have…							Percentage of students with … who also have the qualification in this row						
			GCE A level	GCE AS level	Appl. A level	Appl. AS level	Appl. A level (dbl)	Appl. AS level (dbl)	Appl. A/AS level (comb)	GCE A level	GCE AS level	Appl. A level	Appl. AS level	Appl. A level (dbl)	Appl. AS level (dbl)	Appl. A/AS level (comb)
GCE A level	255091	9.1		80.3	6.6	2.3	0.8	0.1	0.0		87.1	83.7	59.0	59.3	27.6	60.3
GCE AS level	235316	0.6	87.1		6.0	2.8	0.9	0.2	0.0	80.3		69.9	66.0	58.2	65.9	55.2
Applied GCE Single Award	20154	0.3	83.7	69.9		4.4	1.6	0.1	0.0	6.6	6.0		8.7	8.6	2.6	17.2
Applied GCE AS level	10136	0.4	59.0	66.0	8.7		1.6	0.6	0.1	2.3	2.8	4.4		4.3	8.6	10.3
Applied GCE Double Award	3655	3.3	59.3	58.2	8.6	4.3		0.2	0.1	0.8	0.9	1.6	1.6		1.1	6.9
Applied GCE AS level Double Award	649	2.5	27.6	65.9	2.6	8.6	1.1			0.1	0.2	0.1	0.6	0.2		
Applied GCE A level / AS level combined	58		60.3	55.2	17.2	10.3	6.9			0.0	0.0	0.0	0.1	0.1		
Extended Project (Diploma)	35904		93.6	82.8	5.0	1.9	0.8	0.1	0.0	13.2	12.6	8.9	6.8	7.5	2.3	3.4
Principal Learning (Diploma) - Level 3	193		52.3	48.7	9.3	2.6				0.0	0.0	0.1	0.0			
Pre-U Principal Subject	2028	9.1	83.2	59.6	0.2	0.3				0.7	0.5	0.0	0.1			
Pre-U Short Course Subject	752		88.8	60.5	0.5	0.3				0.3	0.2	0.0	0.0			
International Baccalaureate	3401	77.8	3.1	8.1		0.1		0.0		0.0	0.1		0.0		0.2	
Key Skill at Level 3	3320		75.5	70.6	13.6	6.2	2.0	0.6		1.0	1.0	2.2	2.0	1.9	2.3	
Advanced Extension Award	835		99.9	71.5	0.5	0.6				0.3	0.3	0.0	0.0			
Free standing Maths Qual L3	18583		91.6	82.6	2.6	1.7	0.2	0.0	0.0	6.7	6.5	2.4	3.0	1.0	0.8	1.7

Table 30 (continued): Pairwise combinations of A/AS levels and other subjects

Qualification	Total number	This qual only	Percentage of students with qualification in this row who also have…							Percentage of students with … who also have the qualification in this row						
			GCE A level	GCE AS level	Appl. A level	Appl. AS level	Appl. A level (dbl)	Appl. AS level (dbl)	Appl. A/AS level (comb)	GCE A level	GCE AS level	Appl. A level	Appl. AS level	Appl. A level (dbl)	Appl. AS level (dbl)	Appl. A/AS level (comb)
OCR Cambridge Technical Certificate L3	1568		61.0	57.2	12.1	6.0	2.9	0.5	0.1	0.4	0.4	0.9	0.9	1.3	0.9	1.7
OCR Cambridge Technical Introductory Diploma L3	3877	2.2	57.8	54.2	10.5	4.5	1.6	0.2	0.1	0.9	0.9	2.0	1.7	1.7	1.2	3.4
OCR Cambridge Technical Subsidiary Diploma L3	350	9.4	17.4	30.0	2.3	3.1		1.4		0.0	0.0	0.0	0.1		0.8	
OCR Cambridge Technical Diploma L3	1155	4.8	40.3	43.7	6.4	4.6	0.4	0.1	0.1	0.2	0.2	0.4	0.5	0.1	0.0	1.7
OCR Cambridge Technical Extended Diploma L3	314	27.1	7.0	26.1		4.1		0.3		0.0	0.0		0.1		0.2	
VRQ Level 3	42948	46.1	28.6	30.7	4.4	2.6	1.0	0.3	0.0	4.8	5.6	9.5	11.2	12.2	18.0	13.8
OCR National Certificate L3	1695	0.6	60.9	52.0	13.2	5.3	0.7	0.1	0.2	0.4	0.4	1.1	0.9	0.3	0.2	5.2
OCR National Diploma L3	547	4.4	38.0	40.0	6.8	3.7				0.1	0.1	0.2	0.2			
OCR National Extended Diploma L3	74	39.2	5.4	16.2	2.7	2.7				0.0	0.0	0.0	0.0			
BTEC Award Level 3	2975	2.4	20.5	28.6	4.2	4.2	1.9	0.4		0.2	0.4	0.6	1.2	1.6	2.0	
BTEC Certificate Level 3	22497	0.7	51.5	53.2	7.5	4.6	0.8	0.3	0.0	4.5	5.1	8.4	10.3	4.7	11.9	6.9
BTEC Diploma Level 3	143657	50.4	20.9	30.0	3.1	2.9	0.3	0.2	0.0	11.8	18.3	21.9	41.7	13.1	51.9	19.0
Asset Languages Advanced (Level 3)	669		92.5	85.5	1.8	1.3	0.3			0.2	0.2	0.1	0.1	0.1		
QCF Language Qual Parent Level 3	83		51.8	49.4		2.4				0.0	0.0		0.0			
Other General Qualification at Level 3	203		61.6	70.9	5.9	3.4	1.0	1.0		0.0	0.1	0.1	0.1	0.1	0.3	

4.3.2 Combination of qualifications by student characteristics and school type

Table 31 shows the percentage of students taking each combination of qualifications split by gender, prior attainment, deprivation (IDACI) and school type. Only the top 10 combinations of qualifications were recorded separately with the remaining combinations being grouped under "Other" according to whether A levels were a part of the combination and whether multiple qualifications were included. When determining the combinations in this analysis, smaller qualifications such as AS levels and the Extended Project were excluded from consideration, so that combinations were substantively different (and not dominated by whether or not a candidate had taken a 'fourth AS').

As can be seen, the most common option for key stage 5 students is to only take A levels[34] – an option used by just under half of all Key Stage 5 students. Taking A levels alone is particularly common amongst students from independent and grammar schools, and for students with high levels of prior attainment with around nine-tenths of students in each of these groups taking this option. To a lesser extent, this option is also more prevalent amongst students from areas of relatively low deprivation (68% of these students) and female students (52%).

The second most common option is to only take BTECs, with this being particularly prevalent amongst students in FE/Tertiary colleges and amongst those with lower levels of prior attainment. This option is also fairly common in secondary modern schools.

Some differences between different types of schools and students are also obvious for VRQs. As can be seen these qualifications are far more frequently taken by students with low prior attainment, and by those in FE/Tertiary colleges than by those with high prior attainment or by those in other school types.

To provide further detail on this analysis, the number of students of each type taking each combination of qualifications is shown in Table 32.

[34] With the possible addition of AS levels and/or Extended Project.

Table 31: Percentage of students taking each combination of qualifications within different subgroups

Combination of qualifications	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	49.9	51.9	47.6	12.2	55.1	88.8	67.5	52.6	42.0	66.2	63.4	17.1	91.0	86.2	32.9	58.7
BTEC	28.7	24.7	33.1	58.0	20.3	2.5	16.0	25.4	35.0	8.8	10.1	63.7	0.3	1.8	30.3	22.0
A level-BTEC	6.4	6.4	6.4	7.3	9.7	2.5	5.0	7.5	8.3	9.3	11.0	2.1	0.7	1.8	14.8	9.1
VRQ	5.5	6.8	4.0	12.2	2.7	0.3	2.2	3.7	4.2	0.8	0.5	14.4	0.0	0.1	1.5	1.1
A level-Applied A level	3.4	4.1	2.7	2.5	6.1	2.1	3.6	4.5	3.5	5.9	6.2	0.5	2.0	0.9	4.9	4.5
IB	0.8	0.8	0.8	0.1	0.4	1.6	1.3	0.5	0.4	0.8	0.2	0.2	4.4	4.4	0.7	0.2
A level-Applied A level-BTEC	0.5	0.6	0.5	0.7	0.9	0.1	0.4	0.7	0.7	1.0	1.2	0.0	0.0	0.1	1.5	0.5
A level-Applied A level-Applied AS level (dbl)	0.5	0.7	0.3	0.6	0.8	0.2	0.4	0.6	0.6	0.7	0.9	0.1	0.1	0.0	0.8	0.9
BTEC-VRQ	0.5	0.4	0.6	1.0	0.4	0.0	0.2	0.4	0.5	0.2	0.1	1.1	0.0	0.0	0.7	0.3
Applied A level-BTEC	0.5	0.4	0.5	0.9	0.4	0.0	0.3	0.6	0.7	0.9	0.9	0.0	0.0	0.1	1.2	0.5
Other combination with A levels	1.7	1.4	1.9	1.4	2.0	1.7	2.0	1.8	1.7	2.9	2.6	0.2	1.2	3.5	3.8	0.9
Other combination without A levels	1.0	1.0	1.0	2.1	0.7	0.0	0.5	1.1	1.6	1.7	2.0	0.4	0.2	0.1	4.5	0.7
Other single qualification type	0.6	0.6	0.6	1.1	0.4	0.3	0.5	0.6	0.8	0.8	0.9	0.2	0.1	1.0	2.4	0.6
Total N	**412482**	**217074**	**195408**	**149577**	**123230**	**127702**	**126412**	**114289**	**115443**	**84551**	**70935**	**100598**	**9319**	**37033**	**3765**	**75181**

Table 32: Number of students taking each combination of qualifications within different subgroups

Combination of qualifications	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	205756	112720	93036	18258	67954	113351	85361	60115	48462	55980	44967	17187	8483	31924	1240	44096
BTEC	118483	53720	64763	86748	25056	3146	20166	29057	40417	7442	7171	64081	30	650	1139	16503
A level-BTEC	26420	13836	12584	10946	12013	3140	6324	8561	9635	7839	7784	2136	63	685	558	6859
VRQ	22609	14744	7865	18260	3351	346	2811	4256	4865	639	386	14441	0	25	57	818
A level-Applied A level	14086	8870	5216	3765	7485	2726	4536	5119	4001	5008	4363	485	190	332	185	3404
IB	3368	1777	1591	89	439	1989	1600	586	475	673	117	183	410	1614	25	169
A level-Applied A level-BTEC	2250	1315	935	1008	1080	143	555	800	790	851	831	47	0	45	57	401
A level-Applied A level-Applied AS level (dbl)	2098	1606	492	869	989	229	554	713	723	615	673	87	13	6	30	671
BTEC-VRQ	2046	928	1118	1469	461	58	300	433	553	167	82	1079	1	2	25	243
Applied A level-BTEC	1936	960	976	1374	524	28	369	690	816	801	648	41	1	43	46	345
Other combination with A levels	6852	3141	3711	2053	2498	2168	2505	2048	1908	2446	1872	246	108	1306	144	699
Other combination without A levels	4106	2201	1905	3161	875	47	640	1227	1873	1430	1407	389	14	46	170	527
Other single qualification type	2472	1256	1216	1577	505	331	691	684	925	660	634	196	6	355	89	446
Total N	**412482**	**217074**	**195408**	**149577**	**123230**	**127702**	**126412**	**114289**	**115443**	**84551**	**70935**	**100598**	**9319**	**37033**	**3765**	**75181**

4.3.3 A level subjects taken by students also taking other types of qualifications

In Table 33 we show for each A level subject the proportion of the entries that are from candidates with combinations involving other qualifications. Because this table ignores smaller qualifications such as AS levels and Extended Project, only substantively mixed programmes are highlighted. The table is sorted in descending order of the proportion of students taking only A levels.

The top of the table consists of traditional 'academic' subjects – here, almost all the students are taking an all-A level programme. At the bottom of the list are some language subjects with small entries, possibly disproportionately affected by a few centres only. The subjects with large entries that are most commonly taken in combination with other qualifications are English Language, English Language and Literature, Sociology, Media Studies, and Art & Design (Photography). However, even for Photography, 73% of candidates were studying an all-A level programme, and 80% once Applied A levels were included.

Table 33: Proportion of candidates entering each A level subject with/without other qualifications

A level subject	A level entries	Percentage of entries from candidates who…		
		Only took A levels (excluding Applied)	Only took A levels (including Applied)	Also took BTEC
Mathematics (Further)	12445	97.0	97.5	0.7
Chemistry	44149	97.0	97.9	1.3
Physics	30740	95.6	96.9	2.0
Logic/ Philosophy	2321	95.1	96.4	2.4
Biology	52412	94.6	96.6	2.5
Classical Civilisation	3575	94.5	95.5	2.9
Government & Politics	11718	94.3	95.9	2.2
Chinese	2770	93.6	95.0	3.5
Mathematics	71707	93.4	95.5	2.9
Economics	21588	93.1	95.7	2.5
French	8852	93.1	94.8	3.2
German	3667	91.4	93.6	4.1
Geology	2027	91.3	94.3	4.7
Spanish	6434	91.0	93.4	4.8
History	44486	90.6	93.4	4.7
Geography	28212	89.9	93.9	4.6
Computer Studies/Computing	3654	89.8	92.9	6.0
Music	4661	89.7	92.4	5.9
English Literature	41481	89.0	92.5	6.1
General Studies	24526	88.5	94.7	4.1
Electronics	886	88.1	90.4	9.4
Business Studies & Economics	1945	87.9	92.4	5.2
Religious Studies	19124	87.2	91.8	6.1
Law	9939	85.7	91.4	7.1
Art & Design (Fine Art)	12536	85.2	89.6	8.3
Psychology	49327	84.1	91.0	7.6
Business Studies	22717	84.0	89.6	7.8
Physical Education/Sports Studies	10983	82.6	90.1	8.3
Drama & Theatre Studies	11635	82.6	86.9	11.5
Expressive Arts & Performance Studies	630	82.1	87.1	11.7
Information & Communications Technology	6799	81.8	88.4	10.2
Art & Design	6447	81.7	86.7	11.2
Music Technology	2335	80.6	85.0	13.2
English Language	21582	80.3	87.8	10.2
Accounting/Finance	2594	80.1	86.7	10.4

A level subject	A level entries	Percentage of entries from candidates who…		
		Only took A levels (excluding Applied)	Only took A levels (including Applied)	Also took BTEC
English Language & Literature	13033	79.8	86.1	12.1
Art & Design (Textiles)	3266	78.4	85.3	12.7
D&T Textiles Technology	1522	77.4	88.1	10.2
Art & Design (Graphics)	4095	77.4	83.0	14.8
Film Studies	5764	77.2	82.7	15.2
Sociology	26624	77.1	86.9	11.2
Art & Design (3d Studies)	618	76.9	80.9	17.0
Mathematics (Statistics)	621	76.0	83.1	15.1
D&T Product Design	8705	75.8	83.7	12.5
Media/Film/Tv Studies	19279	73.4	81.6	15.6
Art & Design (Photography)	12088	73.2	80.1	16.9
Use of Mathematics	1177	71.9	79.9	17.7
Communication Studies	1604	71.1	81.5	15.4
Social Science: Citizenship	556	70.9	84.0	13.5
Dance	1850	66.8	74.4	24.1
D&T Food Technology	1104	66.2	83.3	13.7
Urdu	359	62.4	69.9	25.1
Portuguese	297	62.0	67.0	26.3
Polish	770	59.4	65.7	27.8
Turkish	407	56.8	62.9	31.9
Other	9836	88.3	91.1	5.8
Total	**714480**	**88.0**	**92.1**	**6.2**

This section of analysis focusses on students who take both A levels *and* another qualification type – that is the 51,706 students from Table 32 in the categories “A level-BTEC”, “A level-Applied A level”, “A level-Applied A level-BTEC”, “A level-Applied A level-Applied AS level (dbl)” and “Other combination with A levels”. These students took a total of 86,010 A levels in 2014. Table 34 shows how these A levels were distributed across different subjects with the subjects sorted in order of popularity for this group of students as a whole. Any A level subjects taken by less than 100 of these students as a whole were grouped under “Other”.

The most common A level subjects taken by this group of students were Psychology, Sociology and (slightly less frequently overall) Media Studies. These three subjects were the three most popular among most of the combinations of qualifications that were examined. The most common applied A level taken along with each of Psychology and Sociology A levels is Applied Health & Social Care. The fourth column (A level, applied A level and double applied AS level) is dominated by candidates that have both an A level and a double AS level in Applied Health & Social Care.

However, the subjects in the category “Other combination with A levels” show a different pattern: a greater proportion of students took A levels in Mathematics, History and other traditional subjects such as Chemistry and Physics than was the case amongst this group of students as a whole. We investigated this in detail and found this was due to students who held Pre-U qualifications in addition to their A levels. Presumably these students attended schools or colleges where certain departments favoured the Pre-U syllabus over the A level specification. In a small number of cases, students had received an A level and a Pre-U qualification in the same subject.

Table 34: % of A levels in each subject taken by students also taking other types of qualifications

A level subject	All	Combination of qualifications				
		A level-BTEC	A level-Applied A level	A level-Applied A level-BTEC	A level-Applied A level-Applied AS level (dbl)	Other combination with A levels
Psychology	9.10	8.34	11.08	9.84	15.64	5.77
Sociology	7.10	6.63	8.17	8.80	15.92	4.14
Media/Film/Tv Studies	5.95	6.70	5.25	8.18	5.62	4.56
Mathematics	5.49	4.74	5.18	4.03	3.64	9.48
English Literature	5.29	5.79	4.89	5.27	4.73	4.59
English Language	4.94	4.96	5.47	5.39	5.66	3.46
History	4.87	4.80	4.44	3.53	2.51	6.83
Business Studies:Single	4.23	4.04	4.47	3.26	2.63	4.84
Art & Design (Photography)	3.77	4.62	2.70	4.34	4.12	3.04
Geography	3.31	2.88	3.91	3.45	2.10	3.64
Biology	3.27	2.98	3.53	1.90	2.91	4.04
General Studies	3.27	2.17	5.09	4.26	5.29	2.39
English Language & Literature	3.06	3.56	2.81	3.53	2.02	1.96
Religious Studies	2.84	2.63	2.96	2.71	2.91	3.28
D&T Product Design	2.45	2.38	2.32	3.76	2.26	2.71
Drama & Theatre Studies	2.36	3.10	1.76	1.63	1.17	1.57
Physical Education/Sports Studies	2.22	2.00	2.88	3.06	1.45	1.48
Art & Design (Fine Art)	2.16	2.38	1.94	1.94	1.33	2.14
Economics	1.73	1.19	2.02	1.24	0.65	3.28
Law	1.66	1.63	1.95	1.09	1.62	1.21
Physics	1.57	1.48	1.42	0.43	0.24	2.70
Chemistry	1.55	1.33	1.41	0.70	0.20	3.10
Film Studies	1.53	2.02	1.13	1.28	0.44	0.99
Information & Communications Technology	1.44	1.54	1.39	2.02	2.67	0.80
Art & Design	1.37	1.67	1.10	1.01	1.01	1.12
Art & Design (Graphics)	1.08	1.39	0.77	1.01	0.81	0.75
Art & Design (Textiles)	0.82	0.94	0.73	0.89	1.13	0.56
Government & Politics	0.78	0.61	0.65	0.19	0.44	1.82
Dance	0.72	0.99	0.47	1.32	0.53	0.22
French	0.71	0.65	0.53	0.43	0.48	1.44
Spanish	0.67	0.71	0.51	0.47	0.57	0.97
Accounting/Finance	0.60	0.58	0.57	1.09	0.57	0.62
Music	0.56	0.64	0.45	0.31	0.20	0.65
Communication Studies	0.54	0.56	0.55	0.54	0.73	0.41
Music Technology	0.53	0.73	0.35	0.16	0.24	0.36
Computer Studies/Computing	0.43	0.50	0.39	0.47	0.16	0.32
D&T Food Technology	0.43	0.30	0.60	0.97	1.01	0.27
Mathematics (Further)	0.43	0.20	0.21	.	0.08	1.88
D&T Textiles Technology	0.40	0.35	0.53	0.43	0.81	0.22
Use of Mathematics	0.38	0.47	0.33	0.50	0.16	0.24
German	0.37	0.35	0.29	0.23	0.12	0.70
Polish	0.36	0.47	0.15	0.62	0.28	0.41
Business Studies & Economics	0.27	0.22	0.29	0.35	0.36	0.39
Classical Civilisation	0.23	0.25	0.12	0.08	0.12	0.46
Chinese	0.21	0.22	0.13	0.19	0.16	0.36
Geology	0.20	0.23	0.21	0.04	0.08	0.17
Turkish	0.20	0.29	0.07	0.27	0.24	0.17
Social Science: Citizenship	0.19	0.16	0.25	0.35	0.16	0.12
Art & Design (3d Studies)	0.17	0.25	0.08	0.04	0.16	0.11

A level subject	All	Combination of qualifications				
		A level-BTEC	A level-Applied A level	A level-Applied A level-BTEC	A level-Applied A level-Applied AS level (dbl)	Other combination with A levels
Mathematics (Statistics)	0.17	0.21	0.16	0.27	0.04	0.09
Urdu	0.16	0.20	0.08	0.27	0.20	0.15
Expressive Arts & Performance Studies	0.13	0.17	0.11	0.08	0.04	0.06
Logic/ Philosophy	0.13	0.13	0.10	0.00	0.08	0.24
Portuguese	0.13	0.17	0.05	0.23	0.04	0.17
Electronics	0.12	0.20	0.07	0.00	0.00	0.02
Other	1.34	1.28	0.88	1.59	1.25	2.53
Total number of A levels	**86010**	**41698**	**27185**	**2580**	**2475**	**12072**
Mean number of A levels per candidate	**1.66**	**1.58**	**1.93**	**1.15**	**1.18**	**1.76**
Total number of candidates	**51706**	**26420**	**14086**	**2250**	**2098**	**6852**

A little more detail is provided in Table 35 which provides the number of students taking each A level subject alongside other qualifications.

Table 35: Number of A levels in each subject taken by students also taking other types of qualifications

A level subject	All	Combination of qualifications				
		A level-BTEC	A level-Applied A level	A level-Applied A level-BTEC	A level-Applied A level-Applied AS level (dbl)	Other combination with A levels
Psychology	7828	3478	3012	254	387	697
Sociology	6107	2766	2220	227	394	500
Media/Film/Tv Studies	5121	2792	1428	211	139	551
Mathematics	4726	1978	1409	104	90	1145
English Literature	4549	2414	1328	136	117	554
English Language	4250	2067	1486	139	140	418
History	4187	2002	1208	91	62	824
Business Studies:Single	3634	1685	1216	84	65	584
Art & Design (Photography)	3243	1927	735	112	102	367
Geography	2847	1202	1064	89	52	440
Biology	2816	903	1383	110	131	289
General Studies	2812	1243	960	49	72	488
English Language & Literature	2628	1485	765	91	50	237
Religious Studies	2441	1098	805	70	72	396
D&T Product Design	2106	994	632	97	56	327
Drama & Theatre Studies	2030	1291	479	42	29	189
Physical Education/Sports Studies	1910	832	784	79	36	179
Art & Design (Fine Art)	1861	992	528	50	33	258
Economics	1490	498	548	32	16	396
Law	1425	680	531	28	40	146
Physics	1348	619	386	11	6	326
Chemistry	1336	556	383	18	5	374
Film Studies	1314	844	307	33	11	119
Information & Communications Technology	1235	644	377	52	66	96
Art & Design	1182	698	298	26	25	135
Art & Design (Graphics)	927	581	209	26	20	91
Art & Design (Textiles)	707	391	198	23	28	67
Government & Politics	669	256	177	5	11	220
Dance	615	412	129	34	13	27
French	612	271	144	11	12	174
Spanish	576	294	139	12	14	117
Accounting/Finance	516	243	156	28	14	75
Music	479	265	122	8	5	79
Communication Studies	464	233	150	14	18	49
Music Technology	452	304	95	4	6	43
Computer Studies/Computing	373	126	164	25	25	33
D&T Food Technology	371	209	107	12	4	39
Mathematics (Further)	371	85	57	.	2	227
D&T Textiles Technology	344	144	143	11	20	26
Use of Mathematics	331	195	90	13	4	29
German	317	144	80	6	3	84
Polish	313	198	42	16	7	50
Business Studies & Economics	235	92	78	9	9	47
Classical Civilisation	197	103	33	2	3	56
Chinese	178	91	35	5	4	43

A level subject	All	Combination of qualifications				
		A level-BTEC	A level-Applied A level	A level-Applied A level-BTEC	A level-Applied A level-Applied AS level (dbl)	Other combination with A levels
Geology	176	94	58	1	2	21
Turkish	176	123	19	7	6	21
Social Science: Citizenship	162	66	69	9	4	14
Art & Design (3d Studies)	149	87	43	7	1	11
Mathematics (Statistics)	143	104	21	1	4	13
Urdu	135	83	22	7	5	18
Expressive Arts & Performance Studies	114	55	28	0	2	29
Logic/ Philosophy	113	72	31	2	1	7
Portuguese	113	72	14	6	1	20
Electronics	105	83	20	0	0	2
Other	1151	534	240	41	31	305
Total N	**86010**	**41698**	**27185**	**2580**	**2475**	**12072**

Table 36 shows how the A level subject choices of this group of students vary according to their characteristics and according to school type. There are a number of clear differences amongst the various subgroups. For example:

- Pupils with high prior attainment are most likely to choose to take Mathematics (12%), Psychology (9%) or Biology (8%) alongside other qualifications whereas those with low prior attainment are most likely to take Media/Film/TV studies (11%), Sociology (9%) or Art & Design Photography (7%). Those with medium levels of prior attainment are different again and are most likely to take Psychology (11%), Sociology (8%) and English Literature (6%).
- Female students are most likely to take A levels in Psychology (13%) and Sociology (10%) alongside their other qualifications whereas male students are more likely to take Mathematics (9%) or Media/Film/TV studies (7%).

Many of these trends (for example, the gender and prior attainment differences in Mathematics uptake) are similar to the A level cohort overall (Gill, 2015a).

Further details on the precise numbers of students taking each A level subject alongside their other qualifications is given in Table 37.

Table 36: % of A levels in each subject taken by students in each category also taking other types of qualifications

A level subject	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
Psychology	9.10	12.62	4.59	6.44	10.89	9.15	8.21	9.38	9.76	9.25	9.38	9.39	8.41	3.02	8.04	10.06
Sociology	7.10	9.93	3.47	8.64	7.80	3.35	5.49	6.64	9.05	6.82	7.45	7.16	3.46	0.45	7.64	8.72
Media/Film/Tv Studies	5.95	5.13	7.01	10.48	4.91	1.68	5.25	6.25	6.56	6.55	6.54	4.86	3.34	1.96	11.22	5.18
Mathematics	5.49	2.99	8.71	1.97	4.97	11.62	5.73	5.13	5.61	5.94	5.34	5.21	10.02	11.90	5.41	3.48
English Literature	5.29	7.07	3.00	4.36	5.62	6.02	4.86	5.68	5.51	5.79	6.06	4.37	7.03	5.25	9.19	3.41
English Language	4.94	6.20	3.33	5.31	5.32	3.62	5.21	5.34	4.32	4.63	4.64	5.19	4.15	1.60	4.39	6.69
History	4.87	3.69	6.38	3.91	5.02	6.09	5.40	5.18	4.37	5.30	5.06	3.60	5.65	7.87	7.09	3.52
Business Studies:Single	4.23	2.59	6.32	4.18	4.88	2.75	4.86	4.02	3.84	3.97	3.95	5.46	4.49	3.49	2.77	4.89
Art & Design (Photography)	3.77	4.79	2.46	6.67	3.03	1.15	3.58	3.99	3.69	3.76	3.61	5.42	0.46	2.16	5.95	3.86
Geography	3.31	2.48	4.38	1.91	3.85	4.27	4.17	3.83	2.29	3.74	3.79	1.89	5.88	4.19	3.78	2.10
Biology	3.27	3.47	3.01	0.70	3.14	7.53	3.39	3.36	3.07	3.58	3.07	3.06	7.26	4.13	2.36	2.78
General Studies	3.27	3.32	3.22	2.32	3.51	4.26	4.34	3.60	2.08	2.80	3.89	0.45	3.57	0.61	0.68	4.62
English Language & Literature	3.06	3.96	1.90	3.48	3.25	2.04	2.70	3.27	3.21	2.95	2.82	4.76	0.58	0.72	2.23	3.68
Religious Studies	2.84	3.54	1.94	3.05	2.89	2.42	2.60	2.58	3.48	3.07	3.53	0.62	1.61	4.08	3.24	1.96
D&T Product Design	2.45	0.97	4.34	3.31	2.41	1.31	2.71	2.79	2.10	3.04	3.33	0.43	1.61	2.25	1.96	1.00
Drama & Theatre Studies	2.36	2.75	1.86	3.11	2.13	1.80	2.39	2.46	2.36	2.51	2.32	1.93	0.81	3.09	2.57	2.13
Physical Education/Sports Studies	2.22	1.34	3.35	1.84	2.73	1.69	2.69	2.61	1.46	2.22	2.26	1.44	3.46	1.85	1.62	2.44
Art & Design (Fine Art)	2.16	2.83	1.31	2.83	2.00	1.54	2.06	2.14	2.27	2.20	2.39	2.38	1.73	2.07	3.04	1.74
Economics	1.73	0.74	3.00	0.95	1.79	2.75	2.17	1.57	1.54	1.92	1.47	0.92	3.92	4.42	0.14	1.47
Law	1.66	1.80	1.47	1.80	1.84	1.07	1.25	1.53	2.00	1.23	1.21	2.72	0.35	0.14	0.95	3.10
Physics	1.57	0.30	3.20	0.38	1.32	3.89	1.88	1.64	1.23	1.84	1.47	1.78	4.61	3.11	1.82	0.75
Chemistry	1.55	1.07	2.17	0.30	1.26	4.06	1.62	1.33	1.65	1.47	1.47	1.20	4.72	4.71	1.28	1.02
Film Studies	1.53	1.05	2.14	2.86	1.14	0.47	1.31	1.60	1.46	1.27	1.21	2.85	0.35	0.65	1.55	2.22
Information & Communications Technology	1.44	0.88	2.15	2.15	1.39	0.49	1.07	1.42	1.78	1.47	1.66	1.50	1.27	0.41	0.68	1.41
Art & Design	1.37	1.76	0.88	2.02	1.19	0.86	1.17	1.36	1.72	1.49	1.79	0.58	0.46	1.38	3.11	0.78
Art & Design (Graphics)	1.08	0.89	1.31	1.57	0.98	0.57	1.07	0.98	1.08	0.66	0.69	2.23	0.12	0.25	1.28	2.11
Art & Design (Textiles)	0.82	1.43	0.04	1.15	0.76	0.49	0.73	0.72	0.87	0.65	0.65	1.46	0.35	0.36	0.61	1.29
Government & Politics	0.78	0.50	1.14	0.70	0.65	1.18	1.02	0.66	0.63	0.81	0.51	0.45	2.07	2.59	0.54	0.71
Dance	0.72	1.17	0.13	0.84	0.74	0.51	0.67	0.71	0.77	0.70	0.51	1.33	0.00	0.59	0.20	0.95
French	0.71	0.81	0.58	0.41	0.47	1.62	0.91	0.58	0.63	0.66	0.54	0.56	0.92	2.68	0.47	0.61

A level subject	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
Spanish	0.67	0.68	0.65	0.54	0.48	1.14	0.66	0.50	0.81	0.48	0.64	0.92	0.81	1.85	0.27	0.67
Accounting/Finance	0.60	0.32	0.96	0.59	0.72	0.33	0.40	0.50	0.78	0.54	0.37	0.96	0.00	0.05	0.41	1.09
Music	0.56	0.45	0.70	0.44	0.51	0.82	0.74	0.54	0.39	0.51	0.46	0.96	0.81	1.19	0.14	0.52
Communication Studies	0.54	0.69	0.35	0.99	0.43	0.13	0.54	0.51	0.47	0.45	0.26	1.20	0.00	0.27	0.00	1.00
Music Technology	0.53	0.14	1.02	0.76	0.44	0.40	0.63	0.42	0.49	0.45	0.35	0.94	0.23	0.47	0.47	0.76
Computer Studies/Computing	0.43	0.06	0.91	0.46	0.45	0.35	0.43	0.48	0.38	0.38	0.30	0.77	0.00	0.16	0.14	0.68
D&T Food Technology	0.43	0.59	0.23	0.52	0.47	0.24	0.54	0.55	0.29	0.71	0.53	0.00	0.12	0.09	0.20	0.12
Mathematics (Further)	0.43	0.14	0.80	0.05	0.16	1.51	0.72	0.29	0.24	0.34	0.28	0.11	1.38	3.63	0.07	0.11
D&T Textiles Technology	0.40	0.69	0.02	0.38	0.44	0.33	0.47	0.47	0.33	0.49	0.60	0.02	0.58	0.16	0.54	0.15
Use of Mathematics	0.38	0.22	0.60	0.51	0.39	0.19	0.31	0.32	0.33	0.07	0.04	0.81	0.00	0.00	0.00	1.31
German	0.37	0.36	0.38	0.30	0.22	0.66	0.48	0.24	0.33	0.37	0.33	0.49	0.46	1.13	0.14	0.23
Polish	0.36	0.33	0.40	0.60	0.30	0.14	0.11	0.20	0.68	0.22	0.42	1.26	0.35	0.09	0.47	0.27
Business Studies & Economics	0.27	0.13	0.46	0.26	0.31	0.19	0.31	0.31	0.24	0.30	0.49	0.06	0.23	0.23	0.14	0.04
Classical Civilisation	0.23	0.23	0.23	0.20	0.19	0.38	0.29	0.18	0.18	0.13	0.10	0.36	0.35	0.77	0.14	0.39
Chinese	0.21	0.21	0.20	0.20	0.11	0.17	0.18	0.10	0.16	0.11	0.10	0.43	0.46	1.44	0.20	0.15
Geology	0.20	0.08	0.36	0.25	0.21	0.14	0.26	0.21	0.07	0.12	0.11	0.47	0.00	0.00	0.14	0.43
Turkish	0.20	0.22	0.18	0.42	0.14	0.04	0.02	0.07	0.50	0.15	0.29	0.13	0.12	0.09	0.07	0.21
Social Science: Citizenship	0.19	0.20	0.17	0.34	0.15	0.05	0.10	0.16	0.27	0.21	0.12	0.19	0.12	0.00	0.00	0.30
Art & Design (3d Studies)	0.17	0.15	0.19	0.26	0.14	0.10	0.13	0.12	0.22	0.06	0.03	0.66	0.00	0.25	0.00	0.38
Mathematics (Statistics)	0.17	0.15	0.20	0.19	0.19	0.12	0.15	0.16	0.19	0.14	0.05	0.06	0.00	0.02	0.00	0.47
Urdu	0.16	0.19	0.11	0.26	0.12	0.06	0.01	0.05	0.40	0.20	0.22	0.04	0.00	0.00	0.07	0.10
Expressive Arts & Performance Studies	0.13	0.19	0.06	0.14	0.15	0.09	0.17	0.10	0.13	0.13	0.04	0.06	0.00	0.05	0.00	0.26
Logic/ Philosophy	0.13	0.13	0.14	0.09	0.13	0.22	0.15	0.12	0.09	0.12	0.06	0.21	0.12	0.14	0.07	0.22
Portuguese	0.13	0.12	0.15	0.22	0.08	0.10	0.06	0.06	0.27	0.11	0.18	0.26	0.00	0.23	0.00	0.07
Electronics	0.12	0.01	0.27	0.17	0.10	0.10	0.11	0.09	0.10	0.03	0.04	0.21	0.00	0.07	0.00	0.34
Other	1.34	1.24	1.46	1.24	1.08	1.77	1.50	0.92	1.25	0.88	0.97	3.19	1.27	5.66	0.54	1.06
Total N	**86010**	**48351**	**37659**	**26495**	**41076**	**17412**	**25187**	**28888**	**26937**	**28034**	**25651**	**4667**	**868**	**4436**	**1480**	**19879**

Table 37: Number of A levels in each subject taken by students in each category also taking other types of qualifications

A level subject	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
Psychology	7828	6101	1727	1707	4475	1593	2069	2711	2628	2594	2405	438	73	134	119	1999
Sociology	6107	4800	1307	2288	3205	584	1382	1919	2439	1913	1910	334	30	20	113	1733
Media/Film/Tv Studies	5121	2480	2641	2777	2015	293	1322	1806	1766	1836	1678	227	29	87	166	1030
Mathematics	4726	1446	3280	523	2043	2024	1442	1481	1511	1666	1370	243	87	528	80	691
English Literature	4549	3420	1129	1156	2309	1048	1225	1642	1484	1623	1555	204	61	233	136	677
English Language	4250	2996	1254	1407	2187	631	1312	1543	1165	1299	1189	242	36	71	65	1329
History	4187	1786	2401	1035	2060	1061	1361	1495	1178	1485	1298	168	49	349	105	700
Business Studies:Single	3634	1253	2381	1108	2004	479	1224	1160	1035	1112	1014	255	39	155	41	973
Art & Design (Photography)	3243	2318	925	1766	1246	200	901	1154	993	1053	926	253	4	96	88	768
Geography	2847	1197	1650	505	1583	743	1050	1105	617	1049	972	88	51	186	56	417
General Studies	2816	1604	1212	614	1440	741	1094	1039	559	784	998	21	31	27	10	918
Biology	2812	1679	1133	185	1288	1311	854	970	827	1003	788	143	63	183	35	552
English Language & Literature	2628	1914	714	921	1336	356	681	945	866	827	724	222	5	32	33	731
Religious Studies	2441	1711	730	807	1189	422	654	744	937	860	905	29	14	181	48	389
D&T Product Design	2106	470	1636	876	989	228	683	807	566	853	854	20	14	100	29	199
Drama & Theatre Studies	2030	1330	700	824	875	313	601	711	637	704	595	90	7	137	38	424
Physical Education/Sports Studies	1910	647	1263	488	1121	294	678	754	393	622	580	67	30	82	24	486
Art & Design (Fine Art)	1861	1367	494	749	822	268	519	617	612	617	612	111	15	92	45	346
Economics	1490	360	1130	253	737	478	546	453	416	537	377	43	34	196	2	292
Law	1425	871	554	478	755	187	315	442	540	344	310	127	3	6	14	617
Physics	1348	143	1205	101	544	677	474	475	330	515	378	83	40	138	27	150
Chemistry	1336	517	819	79	516	707	407	383	445	412	378	56	41	209	19	202
Film Studies	1314	509	805	759	470	82	329	461	393	357	311	133	3	29	23	441
Information & Communications Technology	1235	425	810	569	572	85	270	410	479	412	425	70	11	18	10	280
Art & Design	1182	850	332	536	488	149	295	393	464	419	460	27	4	61	46	155
Art & Design (Graphics)	927	432	495	417	404	100	269	284	290	185	176	104	1	11	19	420
Art & Design (Textiles)	707	691	16	304	311	85	185	209	235	181	166	68	3	16	9	257
Government & Politics	669	241	428	186	267	205	256	190	170	228	132	21	18	115	8	142
Dance	615	566	49	223	302	88	170	204	208	196	132	62	0	26	3	188
French	612	393	219	109	193	282	230	167	170	186	138	26	8	119	7	121

A level subject	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
Spanish	576	330	246	144	198	199	166	145	217	135	164	43	7	82	4	134
Accounting/Finance	516	156	360	156	294	58	102	144	209	151	95	45	0	2	6	217
Music	479	216	263	116	211	142	187	155	104	144	117	45	7	53	2	103
Communication Studies	464	333	131	261	178	22	137	147	127	125	67	56	0	12	0	198
Music Technology	452	66	386	201	181	69	159	121	132	125	91	44	2	21	7	151
D&T Food Technology	373	287	86	137	193	41	136	158	77	198	136	0	1	4	3	23
Computer Studies/Computing	371	30	341	121	186	61	109	138	102	106	78	36	0	7	2	136
Mathematics (Further)	371	68	303	12	64	263	182	85	65	96	73	5	12	161	1	22
D&T Textiles Technology	344	336	8	102	182	58	119	135	89	137	154	1	5	7	8	29
Use of Mathematics	331	106	225	134	159	33	77	91	88	21	11	38	0	0	0	261
German	317	175	142	79	92	115	121	70	88	103	84	23	4	50	2	46
Polish	313	161	152	160	123	24	28	58	184	63	107	59	3	4	7	54
Business Studies & Economics	235	63	172	68	128	33	77	90	65	84	126	3	2	10	2	8
Classical Civilisation	197	110	87	52	77	66	74	52	49	36	26	17	3	34	2	78
Chinese	178	101	77	53	46	30	46	30	42	30	26	20	4	64	3	30
Geology	176	40	136	65	87	24	65	62	20	34	28	22	0	0	2	86
Turkish	176	107	69	111	57	7	6	19	136	43	74	6	1	4	1	41
Social Science: Citizenship	162	98	64	90	62	9	24	47	74	60	32	9	1	0	0	60
Mathematics (Statistics)	149	72	77	51	76	21	38	47	52	39	12	3	0	1	0	94
Art & Design (3d Studies)	143	71	72	69	57	17	34	34	59	18	8	31	0	11	0	75
Urdu	135	94	41	70	48	11	3	13	109	55	56	2	0	0	1	20
Logic/ Philosophy	114	61	53	23	52	38	37	36	23	35	15	10	1	6	1	43
Expressive Arts & Performance Studies	113	92	21	38	60	15	42	29	36	37	9	3	0	2	0	51
Portuguese	113	56	57	58	34	17	14	16	74	31	45	12	0	10	0	13
Electronics	105	4	101	45	43	17	28	27	27	9	11	10	0	3	0	68
Other	1151	601	550	329	442	308	378	265	336	247	250	149	11	251	8	211
Total N	**86010**	**48351**	**37659**	**26495**	**41076**	**17412**	**25187**	**28888**	**26937**	**28034**	**25651**	**4667**	**868**	**4436**	**1480**	**19879**

4.3.4 AS level uptake by candidates taking different combinations of qualifications

This section of analysis explores the extent to which the candidates included in analysis so far (that is, all of those taking at least one qualification of equivalent size to a full A level) had also certificated for AS levels. Specifically, for each group of students according to the combination of qualifications they had taken and their background characteristics:

- Table 38 provides details on the average number of AS levels taken by candidates
- Table 39 indicates the percentage of candidates in each group who had taken (and certificated for) at least one AS level

In both of these tables, any cells in the table that were based on 20 or fewer candidates were suppressed.

AS levels in the same subject in which the candidate was also awarded an A level have been removed.

Amongst candidates who had taken only A levels the mean number of AS levels they had certificated for was just above 1. Of the candidates who had not taken any A levels, AS levels were most prevalent amongst those who had taken BTECs or 'other qualifications' – particularly amongst those with higher levels of prior attainment. The use of AS levels was least prevalent amongst those candidates focussing purely on the International Baccalaureate, unsurprisingly, as the IB is intended to be a full-time programme.

Further details are provided in Table 40. Within the group of students who had taken at least one AS level, this indicates the numbers of candidates of different types taking each defined combination of A level-size qualifications.

Table 41 indicates the percentage of candidates in each group who had taken (and certificated for) at least one applied AS level (candidates rarely took more than one). As would be expected these figures are higher amongst candidates who went on to complete a combination of qualifications including a full applied A level. The use of applied AS levels was very rare amongst students taking other combinations of qualifications. Within the group of students who had taken at least one applied AS level, Table 42 indicates the numbers of candidates of different types taking each combination of qualifications.

Table 38: Average number of AS levels taken by each group of students (excluding those with A level in same subject)

	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	1.23	1.22	1.23	1.24	1.27	1.21	1.17	1.25	1.22	1.21	1.19	1.41	1.38	0.97	0.96	1.38
BTEC	0.54	0.54	0.54	0.34	1.18	1.46	0.50	0.43	0.38	0.52	0.56	0.54	1.17	0.64	0.33	0.64
A level-BTEC	0.97	0.94	1.00	0.79	1.10	1.10	0.95	0.92	0.88	0.90	0.95	1.07	1.27	0.63	0.59	1.11
VRQ	0.21	0.24	0.15	0.11	0.67	1.12	0.18	0.16	0.12	0.21	0.16	0.20	.	0.48	0.16	0.25
A level-Applied A level	1.08	1.05	1.12	0.95	1.11	1.18	1.07	1.06	1.03	1.05	1.03	1.19	1.42	0.71	0.85	1.20
IB	0.11	0.13	0.09	0.07	0.15	0.14	0.09	0.21	0.16	0.28	0.01	0.19	0.12	0.05	0.00	0.12
A level-Applied A level-BTEC	0.83	0.83	0.83	0.67	0.95	0.99	0.79	0.81	0.74	0.80	0.80	0.85	.	0.33	0.67	1.04
A level-Applied A level-Applied AS level (dbl)	0.84	0.83	0.86	0.68	0.94	1.03	0.84	0.84	0.68	0.81	0.78	0.95	1.62	0.67	0.80	0.90
BTEC-VRQ	0.20	0.23	0.19	0.14	0.42	0.31	0.12	0.12	0.11	0.28	0.45	0.16	1.00	1.50	0.44	0.33
Applied A level-BTEC	0.80	0.85	0.75	0.68	1.09	1.32	0.80	0.84	0.68	0.70	0.84	0.85	1.00	0.56	0.52	0.97
Other combination with A levels	0.87	0.87	0.86	0.72	1.00	0.87	0.85	0.86	0.81	0.84	0.88	0.97	0.94	0.76	0.62	1.08
Other combination without A levels	0.70	0.76	0.64	0.59	1.07	1.49	0.81	0.73	0.58	0.59	0.67	0.88	0.14	0.41	0.58	0.94
Other single qualification type	1.01	1.05	0.96	0.86	1.83	0.50	0.93	1.17	0.97	1.06	1.16	0.91	1.67	0.35	0.62	1.44
All candidates	**0.92**	**0.93**	**0.91**	**0.49**	**1.19**	**1.19**	**1.00**	**0.94**	**0.81**	**1.06**	**1.05**	**0.66**	**1.32**	**0.90**	**0.64**	**1.15**

Table 39: Percentage of candidates taking at least one AS level (excluding those with A level in same subject) by each group of students

	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	84.1	84.6	83.5	72.2	82.4	88.0	84.7	85.6	83.0	85.1	83.7	81.3	90.3	77.0	72.4	84.1
BTEC	22.3	22.3	22.4	16.4	41.4	47.2	21.2	19.4	18.6	32.7	35.0	19.6	40.0	38.3	21.9	22.3
A level-BTEC	62.9	62.4	63.6	53.0	70.2	70.7	64.5	63.7	58.8	61.6	63.5	58.3	79.4	41.8	47.8	62.9
VRQ	7.7	9.0	5.4	4.7	22.4	35.3	6.7	6.7	4.9	10.6	9.3	7.3	.	20.0	8.8	7.7
A level-Applied A level	75.6	76.0	74.9	65.0	77.8	84.5	76.7	76.3	72.4	73.7	72.7	78.4	87.4	56.9	67.6	75.6
IB	8.0	10.4	5.2	5.6	8.4	10.8	7.4	15.5	9.3	19.3	0.9	13.7	7.3	3.9	0.0	8.0
A level-Applied A level-BTEC	60.4	61.5	58.9	50.9	67.9	68.5	62.2	61.3	55.9	60.9	59.1	53.2	.	26.7	61.4	60.4
A level-Applied A level-Applied AS level (dbl)	61.2	61.8	59.6	50.9	68.4	71.6	64.4	65.1	52.3	62.8	56.5	52.9	84.6	50.0	60.0	61.2
BTEC-VRQ	11.0	12.0	10.2	8.8	18.2	13.8	8.7	8.8	9.2	21.0	26.8	7.2	100.0	50.0	36.0	11.0
Applied A level-BTEC	52.3	54.9	49.7	45.9	68.5	75.0	55.0	54.8	47.4	48.8	55.9	41.5	100.0	34.9	41.3	52.3
Other combination with A levels	62.0	62.6	61.4	50.3	68.1	66.9	64.5	64.0	56.2	61.8	62.2	56.5	79.6	61.1	49.3	62.0
Other combination without A levels	47.4	51.6	42.5	41.9	65.3	78.7	53.4	49.0	41.7	42.1	45.6	58.6	7.1	26.1	44.7	47.4
Other single qualification type	50.9	52.2	49.5	47.9	76.4	29.3	47.9	59.4	49.2	58.2	59.8	31.6	50.0	25.9	40.4	50.9
All candidates	**58.2**	**60.1**	**56.2**	**27.7**	**69.7**	**84.6**	**69.4**	**61.7**	**52.1**	**74.1**	**72.9**	**29.7**	**86.1**	**71.0**	**48.0**	**58.2**

Table 40: Number of candidates taking at least one AS level (excluding those in same subject as A level) alongside each combination of qualifications

Combination of qualifications	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	173060	95340	77720	13184	55996	99784	72307	51476	40212	47643	37632	13977	7664	24582	898	39218
BTEC	26451	11965	14486	14250	10382	1485	4282	5633	7534	2437	2507	12583	12	249	249	4729
A level-BTEC	16628	8630	7998	5802	8429	2219	4076	5453	5665	4832	4943	1246	50	286	267	4757
VRQ	1747	1322	425	856	751	122	187	286	240	68	36	1055	.	5	5	86
A level-Applied A level	10648	6742	3906	2449	5823	2303	3478	3906	2896	3689	3171	380	166	189	125	2844
IB	268	185	83	5	37	214	119	91	44	130	1	25	30	63	.	18
A level-Applied A level-BTEC	1360	809	551	513	733	98	345	490	442	518	491	25	.	12	35	271
A level-Applied A level-Applied AS level (dbl)	1285	992	293	442	676	164	357	464	378	386	380	46	11	3	18	440
BTEC-VRQ	225	111	114	130	84	8	26	38	51	35	22	78	1	1	9	47
Applied A level-BTEC	1012	527	485	630	359	21	203	378	387	391	362	17	1	15	19	200
Other combination with A levels	4246	1966	2280	1032	1701	1451	1616	1311	1073	1511	1165	139	86	798	71	458
Other combination without A levels	1945	1136	809	1326	571	37	342	601	781	602	641	228	1	12	76	303
Other single qualification type	1258	656	602	756	386	97	331	406	455	384	379	62	3	92	36	285
Total N	**240133**	**130381**	**109752**	**41375**	**85928**	**108003**	**87669**	**70533**	**60158**	**62626**	**51730**	**29861**	**8025**	**26307**	**1808**	**53656**

Table 41: Percentage of candidates taking at least one applied AS level (excluding those in same subject as applied A level) by each group of students

	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	2.10	2.17	2.01	6.29	3.09	0.87	1.37	2.51	2.65	2.12	2.77	2.18	0.88	0.23	5.16	2.81
BTEC	3.00	3.03	2.98	2.71	4.37	2.89	2.77	2.67	2.14	5.12	4.03	2.70	10.00	4.77	2.72	2.84
A level-BTEC	3.53	3.48	3.58	4.42	3.23	1.69	2.94	3.48	3.45	4.01	3.47	2.39	3.17	1.90	5.38	3.37
VRQ	1.46	1.85	0.74	1.18	3.07	2.89	1.07	1.46	0.88	2.35	3.11	1.25	.	4.00	3.51	1.59
A level-Applied A level	4.05	3.91	4.28	5.82	3.99	1.61	3.79	3.77	4.25	4.07	3.85	1.86	2.11	4.22	1.62	4.85
IB	0.03	0.06	0.00	0.00	0.00	0.05	0.00	0.00	0.21	0.15	0.00	0.00	0.00	0.00	0.00	0.00
A level-Applied A level-BTEC	2.84	2.81	2.89	3.17	2.87	0.70	2.88	2.50	2.91	2.35	2.65	0.00	.	8.89	14.04	2.49
A level-Applied A level-Applied AS level (dbl)	3.29	3.18	3.66	3.80	3.34	1.31	2.53	2.95	3.73	4.07	2.38	1.15	0.00	16.67	6.67	3.58
BTEC-VRQ	1.71	2.05	1.43	1.77	1.95	0.00	1.67	2.31	1.27	5.39	9.76	1.02	0.00	0.00	4.00	0.82
Applied A level-BTEC	5.06	5.83	4.30	5.75	3.63	0.00	3.25	5.94	4.66	5.12	4.94	2.44	0.00	4.65	6.52	5.51
Other combination with A levels	3.91	4.23	3.64	6.58	4.64	0.74	2.40	4.59	4.72	4.01	5.02	6.10	0.00	0.31	6.94	6.58
Other combination without A levels	7.43	8.31	6.40	7.81	6.06	8.51	6.88	6.85	6.41	5.17	5.90	17.22	0.00	0.00	8.82	8.35
Other single qualification type	9.83	10.99	8.63	10.84	12.87	1.21	6.37	11.55	11.78	12.88	11.99	5.10	16.67	0.00	4.49	14.35
All candidates	2.62	2.67	2.56	3.44	3.50	0.95	1.83	2.79	2.69	2.90	3.26	2.44	0.91	0.39	4.59	3.09

Table 42: Number of candidates taking at least one applied AS level (excluding those in same subject as applied A level) alongside each combination of qualifications

Combination of qualifications	All	Gender		Prior attainment			IDACI			School type						
		Female	Male	Low	Med.	High	Low	Med.	High	Academy	Comp.	FE /Tertiary College	Grammar	Indep.	Sec. Modern	Sixth form college
A level	4319	2446	1873	1148	2102	989	1166	1511	1283	1185	1245	374	75	73	64	1239
BTEC	3559	1626	1933	2351	1094	91	559	775	865	381	289	1731	3	31	31	468
A level-BTEC	932	481	451	484	388	53	186	298	332	314	270	51	2	13	30	231
VRQ	331	273	58	216	103	10	30	62	43	15	12	181	.	1	2	13
A level-Applied A level	570	347	223	219	299	44	172	193	170	204	168	9	4	14	3	165
IB	1	1	.	.	.	1	.	.	1	1	.	.	.	.	.	.
A level-Applied A level-BTEC	64	37	27	32	31	1	16	20	23	20	22	.	.	4	8	10
A level-Applied A level-Applied AS level (dbl)	69	51	18	33	33	3	14	21	27	25	16	1	.	1	2	24
BTEC-VRQ	35	19	16	26	9	.	5	10	7	9	8	11	.	.	1	2
Applied A level-BTEC	98	56	42	79	19	.	12	41	38	41	32	1	.	2	3	19
Other combination with A levels	268	133	135	135	116	16	60	94	90	98	94	15	.	4	10	46
Other combination without A levels	305	183	122	247	53	4	44	84	120	74	83	67	.	.	15	44
Other single qualification type	243	138	105	171	65	4	44	79	109	85	76	10	1	.	4	64
Total N	10794	5791	5003	5141	4312	1216	2308	3188	3108	2452	2315	2451	85	143	173	2325

4.3.5 AS levels subjects amongst candidates taking different combinations of qualifications

This section shows the AS level subjects taken by candidates taking each combination of A level-size level 3 qualifications. Tables 43 and 44 show the percentage of candidates (of those who took any AS levels) who took each AS level subject. Table 43 shows the breakdown of subjects for candidates who went on to complete at least one A level, whereas Table 44 focusses on candidates who took a combination of level 3 subjects not including any full A levels. Note that an AS level subjects taken by less than 1000 of the candidates in analysis overall were combined into the "Other" category.

Table 43 shows a clear distinction between candidates who took at least one vocational qualification (either a BTEC or an applied A level) and those that focussed purely on A levels, with the former being more likely to take AS level subjects such as Psychology, Sociology and Media Studies and the latter being more likely to take traditional subjects such as Mathematics and the individual sciences.

Table 44 shows a similar (and even more marked) distinction between candidates taking vocational subjects rather than A levels and those taking the International Baccalaureate. Having said this, the number of candidates taking AS levels in the latter group is quite small (as already shown by Table 39) and so results should be treated with some caution.

Table 43: % of AS levels in each subject taken by students taking combinations of qualifications including a full A level

AS level subject	All	Combination of qualifications					
		A level	A level-BTEC	A level-Applied A level	A level-Applied A level-BTEC	A level-Applied A level-Applied AS level (dbl)	Other combination with A levels
General Studies	8.73	8.59	7.49	12.20	12.59	14.20	8.16
Mathematics	8.38	8.46	7.87	7.72	7.66	5.02	9.81
Biology	7.73	7.81	7.37	7.54	6.48	8.10	6.34
Psychology	7.20	6.54	10.46	10.60	13.40	12.83	8.61
Chemistry	7.06	7.61	4.78	3.84	2.68	3.19	4.20
Physics	5.48	5.87	3.68	3.32	1.88	2.05	4.40
History	4.25	4.41	3.48	3.34	3.22	2.79	3.96
English Literature	4.00	4.03	3.63	4.00	3.91	3.99	4.47
Critical Thinking	3.20	3.57	1.14	1.42	1.07	2.00	1.77
Economics	3.06	3.19	2.03	2.56	1.13	2.00	3.89
Geography	3.06	3.02	2.97	3.68	4.23	2.85	3.19
Sociology	2.86	2.39	5.13	5.28	7.07	8.44	3.99
Business Studies:Single	2.62	2.41	4.11	3.11	3.00	3.36	3.30
Religious Studies	2.40	2.39	2.27	2.59	2.79	2.34	2.75
Mathematics (Further)	1.91	2.17	0.58	0.51	0.32	0.11	0.94
French	1.79	1.96	0.87	0.95	0.75	0.80	1.63
English Language	1.66	1.55	2.31	2.19	2.14	3.42	1.60
Media/Film/Tv Studies	1.59	1.38	2.94	2.18	2.68	2.28	2.60
Government & Politics	1.47	1.55	1.11	0.99	1.07	0.68	1.31
Law	1.45	1.34	2.15	1.96	1.77	1.43	1.45
Physical Education/Sports Studies	1.37	1.25	2.24	1.68	2.57	1.48	1.50
Art & Design (Photography)	1.30	1.20	2.10	1.45	1.66	1.03	1.58
Information & Communications Technology	1.16	1.09	1.71	1.23	1.18	1.94	1.05
Art & Design (Fine Art)	1.15	1.15	1.16	0.94	1.55	0.91	1.30
Spanish	1.13	1.22	0.57	0.78	0.38	0.46	0.98
English Language & Literature	1.11	1.03	1.59	1.47	1.88	1.54	0.98

AS level subject	All	Combination of qualifications					
		A level	A level-BTEC	A level-Applied A level	A level-Applied A level-BTEC	A level-Applied A level-Applied AS level (dbl)	Other combination with A levels
D & T Product Design	0.99	0.92	1.37	1.28	1.39	1.20	1.47
Computer Studies/Computing	0.94	0.95	0.94	0.88	0.48	0.29	1.08
Drama & Theatre Studies	0.90	0.91	1.04	0.67	0.54	0.91	0.98
German	0.71	0.78	0.33	0.39	0.38	0.23	0.34
Social Science: Citizenship	0.66	0.62	0.72	1.11	0.64	1.14	0.79
Logic/ Philosophy	0.65	0.70	0.38	0.39	0.21	0.17	0.59
Music	0.61	0.65	0.46	0.32	0.16	0.40	0.37
Film Studies	0.60	0.57	0.94	0.63	0.70	0.34	0.71
Accounting/Finance	0.58	0.52	0.94	0.81	1.13	0.74	1.05
Art & Design	0.57	0.55	0.74	0.57	0.59	0.51	0.78
Classical Civilisation	0.43	0.47	0.20	0.19	.	0.06	0.39
Art & Design (Graphics)	0.38	0.36	0.62	0.28	0.16	0.34	0.56
Use of Mathematics	0.37	0.32	0.73	0.56	0.80	0.34	0.35
Art & Design (Textiles)	0.32	0.30	0.39	0.38	0.38	0.68	0.22
Music Technology	0.31	0.29	0.52	0.26	0.16	0.06	0.37
World Development	0.29	0.27	0.47	0.38	0.16	0.23	0.19
Communication Studies	0.24	0.22	0.30	0.38	0.21	0.34	0.32
Environmental Science	0.23	0.22	0.23	0.28	0.11	0.29	0.20
Geology	0.22	0.23	0.18	0.21	0.05	0.17	0.07
Latin	0.19	0.21	.	.	.	.	0.52
Business Studies & Economics	0.17	0.17	0.18	0.15	0.21	0.17	0.20
Dance	0.17	0.14	0.32	0.30	0.38	0.17	0.07
D & T Textiles Technology	0.16	0.14	0.20	0.24	0.27	0.29	0.17
Chinese	0.14	0.15	0.04	.	.	.	0.27
D & T Food Technology	0.14	0.11	0.23	0.32	0.32	0.57	0.19
Mathematics (Statistics)	0.14	0.12	0.28	0.14	0.11	.	0.10
Electronics	0.12	0.12	0.20	0.07	0.21	0.11	0.08
Other	1.67	1.74	1.31	1.26	1.18	1.03	1.84
Total N	302805	252439	25619	15194	1866	1754	5933

Table 44: % of AS levels in each subject taken by students taking combinations of qualifications not including a full A level

AS level subject	All	Combination of qualifications						
		BTEC	VRQ	IB	BTEC-VRQ	Applied A level-BTEC	Other combination without A levels	Other single qualification type
Psychology	10.49	10.22	10.87	1.88	10.50	13.88	14.65	11.23
Mathematics	6.98	7.17	3.72	12.87	7.16	6.94	6.40	7.74
Sociology	6.64	6.28	7.60	0.54	7.40	8.30	11.66	8.14
Biology	6.22	6.43	5.31	3.49	5.73	4.86	4.52	5.69
Business Studies:Single	4.89	5.00	3.96	0.54	7.40	4.28	4.07	5.17
General Studies	4.48	4.22	4.09	1.61	5.25	8.95	9.12	4.29
Media/Film/Tv Studies	4.31	4.33	4.58	0.00	3.58	4.28	3.38	5.17
Chemistry	3.66	3.90	2.91	2.95	2.15	1.62	1.43	3.21
English Literature	3.41	3.30	4.92	8.04	4.53	2.66	2.99	3.49
Physics	3.16	3.43	1.71	1.61	1.91	1.17	1.39	2.73
Art & Design (Photography)	2.97	2.94	4.39	0.27	3.10	1.95	2.65	2.57
History	2.97	2.99	3.36	1.61	2.15	2.53	2.44	2.93
Physical Education/Sports Studies	2.96	3.09	1.52	0.00	3.34	3.63	2.61	2.57
Geography	2.79	2.73	3.38	1.88	2.39	3.31	2.47	3.41
English Language	2.72	2.67	4.02	0.54	2.63	2.85	2.44	2.25
Law	2.40	2.49	1.95	0.00	2.39	2.20	1.81	2.00
Information & Communications Technology	2.34	2.45	1.71	0.80	3.58	2.08	1.46	1.92
Religious Studies	2.27	2.19	3.00	2.95	1.91	2.72	2.75	2.25
D & T Product Design	2.08	2.07	1.93	3.22	1.91	2.08	2.65	2.00
English Language & Literature	1.93	1.93	2.80	0.80	1.91	1.30	1.11	1.64
Economics	1.83	1.87	0.81	2.95	2.63	2.46	1.67	2.13
Art & Design (Fine Art)	1.66	1.59	3.29	0.27	0.72	1.10	1.46	1.32
Drama & Theatre Studies	1.44	1.50	1.73	0.27	0.72	0.65	0.94	0.84
Film Studies	1.20	1.20	1.28	0.27	0.48	1.17	1.01	1.68
Computer Studies/Computing	1.12	1.20	0.43	1.34	1.19	1.04	0.84	0.72
Accounting/Finance	1.01	1.00	0.60	0.00	1.91	2.27	1.11	1.28
Government & Politics	1.01	1.07	0.71	0.54	0.00	0.65	0.63	1.04
Art & Design	1.00	0.95	2.05	0.27	0.48	0.39	0.84	0.84
Art & Design (Graphics)	0.77	0.79	0.83	0.00	0.24	0.52	0.77	0.52
Use of Mathematics	0.76	0.76	0.58	0.00	0.72	0.84	0.63	1.24
French	0.54	0.50	0.45	10.46	0.24	0.26	0.49	0.48
Critical Thinking	0.52	0.49	0.73	5.63	1.19	0.39	0.49	0.28
Music Technology	0.50	0.53	0.34	1.34	1.19	0.13	0.17	0.24
Art & Design (Textiles)	0.48	0.44	1.03	0.00	0.95	0.52	0.56	0.32
Social Science: Citizenship	0.47	0.40	0.58	1.34	0.48	0.65	1.43	0.84
Spanish	0.46	0.44	0.43	4.02	0.48	0.26	0.49	0.52
Communication Studies	0.44	0.44	0.41	0.27	0.24	0.52	0.56	0.44
Dance	0.37	0.39	0.41	0.27	0.24	0.19	0.07	0.28
Music	0.35	0.38	0.24	0.00	0.72	0.06	0.07	0.24
D & T Textiles Technology	0.30	0.24	0.71	5.36	0.48	0.19	0.31	0.24
Logic/ Philosophy	0.29	0.30	0.32	1.34	0.00	0.26	0.00	0.24
D & T Food Technology	0.28	0.22	0.73	0.00	0.24	0.39	0.63	0.52
Environmental Science	0.28	0.27	0.66	0.27	0.00	0.32	0.03	0.16
German	0.28	0.23	0.36	6.70	0.00	0.52	0.28	0.32

AS level subject	All	Combination of qualifications						
		BTEC	VRQ	IB	BTEC-VRQ	Applied A level-BTEC	Other combination without A levels	Other single qualification type
Business Studies & Economics	0.23	0.23	0.15	0.54	0.00	0.32	0.31	0.12
Electronics	0.22	0.24	0.09	0.80	0.24	0.32	0.00	0.08
Geology	0.22	0.23	0.24	0.00	0.24	0.06	0.17	0.32
Classical Civilisation	0.19	0.19	0.19	0.00	0.24	0.06	0.14	0.16
Mathematics (Statistics)	0.19	0.20	0.06	0.00	0.00	0.32	0.17	0.12
Mathematics (Further)	0.16	0.16	0.19	0.54	0.00	0.06	0.10	0.12
World Development	0.13	0.12	0.15	0.00	0.00	0.52	0.14	0.12
Chinese	0.05	0.03	0.09	0.80	0.24	0.13	0.03	0.12
Latin	0.01	0.00	0.00	0.27	0.00	0.00	0.00	0.04
Other	1.58	1.57	1.43	8.58	2.63	0.84	1.46	1.64
Total number of AS levels	**76581**	**64206**	**4674**	**373**	**419**	**1542**	**2873**	**2494**

We investigated the programmes of students taking AS levels (but not full A levels) and BTECs as this seemed to be a substantial group from Table 44. Although there were 64206 AS level entries, these came from only 27182 students: most had taken several AS levels and one BTEC in their programme. The most popular BTEC subjects for this group were Sports Studies, Health Studies, Business Studies, and Computer Appreciation / Introduction.

4.4 Conclusions

Psychology, Sociology and Media Studies are the A level subjects which are most often taken alongside other qualifications. Among certain subgroups other subjects are particularly popular: for example, students with high prior attainment and male students are more likely to choose Mathematics; those with low prior attainment are more likely to choose Media/Film/TV studies. The mode of assessment is very different for BTEC, which is unitised but all assessed internally at the centre (although from 2016 BTECs will have 40% external assessment). When A levels become linear, it will become more different still, which may make this combination less viable, at least for the groups of students who currently choose it. Therefore we might see a decline in these candidates studying for A level Psychology and/or Sociology in addition.

However, of the total cohort of A level students, only a small proportion take any other qualifications other than A/AS levels.

Some students are taking AS levels alongside a more vocational programme, and the practicality of this may be affected by the reforms. The most popular AS levels taken in this way are Psychology, Mathematics, Biology and Sociology; they are commonly taken alongside BTECs in Sport Studies, Business Studies and Computer Appreciation/Introduction.

Applied A levels are more likely than other A levels to be taken in combination with vocational qualifications. However, interestingly fewer (non-applied) A level students take applied A levels in addition than take BTECs.

5 Conclusions and recommendations

5.1 Conclusions and implications for reforms

Back to the future?

Our analysis of the context and particular features of previous qualifications and reforms has shown that it is not completely accurate to characterise the forthcoming A level reforms as a reversion to the A level and Advanced Supplementary system in the 1990s. The key difference is in the new standalone AS, which will remain at the current standard of the AS (the level expected after one year of post-GCSE study) rather than the full A level standard, as was the case for the Advanced Supplementary. This difference should avoid many of the practical problems experienced under the previous system, particularly with co-teaching.

Models for delivery

A great deal will depend on the programme that schools and colleges offer their students. There is scope for a variety of arrangements under the new framework, due to the decoupling of the AS and the removal of the need to certificate an AS level halfway through an A level course to receive state funding: the number of subjects chosen at the beginning of Year 12, whether this is reduced for Year 13, and whether students take AS examinations in all subjects at the end of Year 12 or only those that they are not planning on taking forward.

UCAS (2015, Figure 11) found that, although most schools/colleges did not know what they planned to offer after 2017, the model with students taking AS levels in four subjects and subsequently A levels in three (reflecting the typical pattern now) was more popular than students taking three A levels only, or an AS level in one subject rather than four. If this is true there is no obvious reason why subject uptake at A or AS level should be significantly affected. However, this does remove one of the benefits of the reforms – a freeing up of teaching and learning time (unless the AS levels are treated more as mock exams with less preparation, given that they will not contribute to final A level grades). From UCAS's survey, independent schools look less likely to offer AS levels, favouring the Extended Project or simply straight A levels.

Given the tightening funding for post-16 education, the number of qualifications taken by students in the maintained sector may reduce, despite the results reported by UCAS, and the dominant model switch back to three full A levels only (perhaps with some duplication at AS, if schools and colleges feel that it is good preparation or motivation). This would lead to a reduction in 'A and/or AS' figures by a quarter on average but not directly affect *overall* A level uptake; it may however affect uptake of *individual* A level subjects, depending on how likely students are to change their mind during post-16 study.

Another variable will be whether schools and colleges co-teach AS and A level students in the same subject, or offer separate groups. While co-teaching A and AS level students may not be the ideal solution from the point of view of teaching and learning, for example removing flexibility in the order in which topics are covered, a lot of consideration has been given to making it possible in the new framework, with Ofqual being careful to leave options open and awarding organisations developing specifications that permit co-teaching with accompanying guidance.

The models adopted for co-teaching are likely to be different from the 'vertical' arrangement that was most common with the Advanced Supplementary and A levels in the 1990s, in which AS students would attend four out of eight periods per week for the full two years. Although the new framework will be flexible as to when the AS can be taken (Gove, 2013a), because the post-2015 AS is set at the same standard as currently (rather than at full A level standard), it seems most practical for 'horizontal' co-teaching to take place, whereby AS students attend all classes for one year and A level students continue on their own in Year 13. The guidance from awarding organisations recommends a structure along these lines.

Co-taught classes have the key disadvantage that they may be disrupted due to assessment arrangements that are irrelevant (or, at best, less important) to half the students. Separate groups are likely only to be viable for larger institutions such as FE and sixth form colleges, and/or large uptake subjects such as Mathematics, but these could make it more difficult for students to change plans part way through their course.

We might see centres offering a small number of subjects at AS level only but requiring (or strongly encouraging) students to take them, as seems to have been the case with the Advanced Supplementary level in 2000 when in some schools and colleges 100% of the cohort took General Studies, for example. However, given the decline in popularity of General Studies, this may not happen as often.

Implementation issues

One distinctive feature of the current A level reforms is the phased implementation across subjects. This will result in a mixed economy of legacy and linear qualifications for two years, and we have shown that – if the current patterns of A level subject choice continue – the majority of students will have a mixed programme of linear and unitised subjects. Schools and colleges will undoubtedly adopt a variety of different models, but maintaining AS exams in reformed subjects for those students who subsequently go on to take the A level (as may be the most practical solution) will negate the key aim of the reforms in reallocating time and focus from external assessment to teaching and learning. Furthermore the transition from a fully modular to a fully linear programme looks set to affect different groups at different times. It is striking that the groups of students who reported that they were least comfortable with the reforms (female students, and those from more deprived socioeconomic backgrounds) will be plunged in soonest.

However, subject choice patterns may not remain static if the linear specifications are less appealing to students, as OCR/NUS's research suggests (OCR, 2014b; NUS, 2014). If students' stated preferences translate into practice, this may cause some females and FSM-eligible students to switch to subjects that are (temporarily) remaining modular, harming uptake in science subjects, for example, which could set back recent growth in this area.[35]

It is possible that we might see a mirror image of one controversial issue that arose when Curriculum 2000 was introduced. If the default model of uptake switches back to three full A levels (as was the case before 2001) the A level grade distribution could be affected. Leaving aside any performance differences associated with modular or linear exams (which should be accounted for using statistical information on prior attainment), the removal of informed choice at the end of Year 12 (Pinot de Moira, 2002) means that grades would be expected to fall *if the A level standard in each subject is held constant*[36]. This is likely not to be as abrupt as was observed in 2002, because the reforms are being implemented on a different timescale in different subjects, and different schools and colleges will adopt different policies. However, we might expect to see more failures (U grades) at A level, for example, if students press on with their courses and entering A levels rather than dropping subjects beforehand based partly on external feedback.

Because different institutions will adopt different models, and due to the phased implementation for different subjects, there is likely to be a much smoother transition (when observing at the national level) than was seen with the introduction of Curriculum 2000 which was a rapid change.

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[35] Outcomes may also be affected if composition of the cohort in each subject changes (for example through migration of certain subgroups to legacy modular specifications).

[36] The removal (or reduction) of informed choice after Year 12 would correspond to a change at a cohort level in the relationship between GCSE and A level attainment, which the current methods for ensuring comparable outcomes do not account for.

Size and breadth of students' programmes

The introduction of Curriculum 2000 resulted immediately in a higher average number of subjects studied by students after 16 (at A or AS level), but a slightly lower number of full A levels. Since 2002 the average number of A level and additional AS level subjects has remained stable. The dominant model now is three A levels with a further subject at AS (replacing the standard 3 A level model before Curriculum 2000, although General Studies A level was often taken in addition), but the uptake of this configuration varies among subgroups, with students at independent schools particularly likely to study this programme, and those eligible for Free School Meals less likely to do so. The proportion of students taking four full A levels has decreased in recent years.

Although the typical 'fourth AS' does add some breadth to students' programmes, this has been declining since 2008 as students have been more likely to study science subjects only.

Purpose of AS level

Although the post-2015 AS level does have a stated purpose, as defined by Ofqual and discussed in section 2.2.1, statements from the government, the regulator and media articles have tended to focus on what the new AS is *not* (a means of obtaining half the A level) rather than something with any intrinsic value in itself, such as a way to achieve curriculum breadth or facilitate progression. It will be interesting to see whether and how schools and colleges promote it. Without a compelling reason for its existence in the eyes of students and schools/colleges, it may wither on the vine after the transitional period given the resource pressures facing these institutions. Uptake will also depend on the early experiences of the first cohorts taking AS and A levels in reformed subjects: how useful candidates and centres find the standalone AS level (both as a standalone qualification, and as preparation for A level) and what the attitude of universities is.

Attitudes of HE

Attitudes of higher education institutions have been a key consideration for introduction of the Advanced Supplementary levels in the 1980s and 1990s, and for the implementation of Curriculum 2000. They look set to be influential for the 2015 reforms, potentially affecting decisions by schools and colleges on how to deliver their post-16 curriculum and assessment (for example, whether students are entered for the standalone AS in all their subjects). However, as has previously been the case, different HE institutions have differing opinions and policies, and most institutions have not declared their qualifications reform policy to UCAS. Unlike with the introduction of Advanced Supplementary levels, there has been no central policy statement from UCAS. While HE institutions will not wish to discriminate against applicants who have not entered AS levels as a result of centre policy, the variation in the amount of information available for different candidates could make admissions decisions difficult, especially for entry in 2017 and 2018 where HE institutions will have to contend with modular and linear AS levels in England, as well as Welsh and Northern Irish AS levels which will remain coupled to the A levels but count for 40% of the A level weighting rather than 50% as now.

Individual subjects

Looking at individual subjects at A level, the largest increases in uptake since Curriculum 2000 have come in Psychology, Religious Studies, Mathematics, Biology and Chemistry. Mathematics has also become especially popular as a subject taken as an additional AS level, so the number of students taking Mathematics after GCSE has increased substantially (even after an initial decrease in 2002, due to difficulties with the new specification). The subject experiencing the most dramatic decline at A level has been General Studies (where uptake has decreased from over 40% to just 10% of students), although it has retained some popularity as an additional AS level. The popularity of English Literature, Business Studies, French, German and Geography has also declined, although for English Literature some of the decline is offset by an increase in the uptake of English Language and Literature A level.

General Studies is now the subject most often dropped after AS levels, followed by modern languages, sciences and Psychology. For many subjects, the proportion of candidates dropping the subject after AS has increased from 2002 to 2014, substantially in the case of General Studies and the three sciences. This need not be viewed negatively, if the combined figure for A and AS level uptake (that is, the overall uptake after GCSEs) has risen as it has in Biology and Chemistry: it may mean that the popularity of the subject as a positive choice for an additional AS (with no intention to continue to A level) has grown. It is, however, potentially more worrying for French and German, which have seen a dramatic decline in uptake at A and AS level coupled with a slight increase in the drop rate. The subjects with a high drop rate do give an indication of which subjects might suffer if the dominant model reverts from three A levels with an additional subject at AS to three full A levels only; however, this depends on how much students change their minds about subject choices through Year 12.

When considering the subjects taken in common combinations, scientific subjects tend to dominate, partly because of the lesser number of subjects to choose from for science specialists, and well-established patterns of subject choice and admissions requirements. The most popular combination in the '3A + 1AS' configuration by some margin is A level Biology, Chemistry and Mathematics, with an extra AS in Physics, and three more of the top ten combinations feature these subjects. Those students with larger programmes (3A + 2AS, or 4A + 1AS) tend to feature Further Mathematics in some role, and commonly feature General Studies or Critical Thinking as an AS subject. Overall this suggests that uptake of science courses may be particularly affected if students' programmes reduce in size overall. However, given the popularity of AS Mathematics and its usefulness as a service subject to support further quantitative study, it seems likely that even if there is a general decline in uptake of AS levels it would not affect Mathematics so much. On the other hand, the popularity and acceptance (by HE) of Core Maths is hard to predict and this could take 'market share' from AS maths for students who want to develop their quantitative skills to support further study in other subjects, such as social sciences degree courses.

Psychology, Sociology & Media Studies are the A level subjects most often taken alongside other Level 3 qualifications, complementing a more vocational programme. However, uptake of A levels in these circumstances may be threatened by the reforms because linear assessment is much less similar to the modes of assessment in vocational qualifications, which are typically modular and assessed at the centre. The number of students affected is relatively small as a proportion of the total A level entry in these subjects. The decline of Applied A levels seems likely also to push students towards more vocational qualifications.

Final thoughts

The implementation of the A level reforms in parallel with so many other changes, as outlined in section 2.3, makes it particularly difficult to predict what might happen over the coming years. Not only is A level content being revised at the same time as assessment structure, but post-16 funding, accountability and vocational qualifications are undergoing change, and changes to GCSEs could also have an effect. In addition, the phased introduction of the reformed A levels means that early indications (for example, AS level entries in reformed subjects in 2016) may be misleading. An illustration of the dangers of trying to draw conclusions part way through a reform is given by Marshall (2001): while in the first year of Curriculum 2000 it was apparent that numbers of students taking modern languages had increased, reversing a steady decline in numbers, it turned out that fewer pursued the courses through to A level than had been the case previously. In the following section we offer recommendations for monitoring the impact of the reforms.

5.2 Recommendations for monitoring

Monitoring the implementation of the reforms will prove more difficult than was the case for Curriculum 2000. The direction of travel will be towards *less* data being available and at a *later*

stage, as exam entries for linear specifications will not be known until near the end of the course, and it will not be possible to measure dropout or drop-down using exam entry data under a linear system. Furthermore, due to the protracted timescale for implementation, we will not be able to judge the effect of the reforms definitively from exam results data until as late as 2020.

In order to address this void in data, it will be necessary to obtain data about the programmes that students are *currently* undertaking (rather than waiting until they have entered for or sat the qualifications). This could be undertaken in three ways.

- One possibility would be a survey among schools and colleges to get the picture 'on the ground': ascertain how centres are running their courses (and what changes are planned for the future), how many qualifications and subjects they are offering, what students' programmes typically look like, and find out the views of students and teachers (including any concerns of teachers over viability of subjects, for example). This would give rich information, but would be expensive to undertake.
- An alternative would be to obtain data from the DfE on Post-16 Learning Aims (PLAMS) along with our National Pupil Database extract, which should give early sight of subject uptake patterns. (Data for FE and sixth form colleges may have to be obtained separately via the Individualised Learner Record (ILR), also linked to the NPD). However, we have not requested or investigated this data before, so an initial feasibility study (comparing learning aims data with eventual exam entries for the cohort of students who took A levels in 2014, for example) would be necessary. It would give less contextual information than a dedicated survey, but the coverage would be far greater.
- Thirdly, it may be possible to gain some intelligence via monitoring of social media, such as Twitter. This may not be a representative sample, and in practice would probably have to supplement either of the above possibilities, but might give some qualitative insights.

If none of these is possible or practical, the full picture will not be available for the *first* tranche of subjects until the 2017 National Pupil Database is available. At this point it should be possible to analyse results for students taking a programme consisting entirely of reformed subjects, and investigate any differences in the tendency of students to take standalone AS levels before taking an A level in the same subjects, and any impact on final grades, for example. However, we are unlikely to gain a full understanding of how the reforms are bedding down until publication of the 2019 National Pupil Database, which will reflect the first cohort to have been awarded new A levels in the third and final tranche of reformed subjects.

Potential data sources for monitoring are listed in Table 45.

Table 45: Data sources for monitoring

Data source	Description	Date of data availability	Comments
Post-16 Learning Aims (PLAMS)	Maintained school & academy sixth forms only	End of January (Y12 & Y13)	To be investigated
Individualised Learner Record (ILR) linked to NPD	FE & Sixth Form colleges	Not clear	To be investigated
JCQ results data	Numbers of entrants & grades for all A level & AS level entries	Results day, August	No accompanying student data (aside from breakdowns by gender).
National Pupil Database KS5 results data	Results for all KS5 students (either Y12 or Y13)	December after end of academic year in question (provisional data); April (amended)	Full picture of uptake, at candidate level allowing linking AS and A level entries; combinations of subjects; etc.

We suggest the following measures, presented in section 3 of our report, are used as the basis for future monitoring.

- Number of A level candidates (Figure 8)
- Average number of A and AS levels taken (Figure 9)
- Whether or not A level candidates have also taken an AS in the same subject (Table 4)
- Popularity of various configurations of A/AS level (Table 5 & Figure 12, and by subgroups)
- Uptake of individual subjects at A, A and/or AS level (Figures 15–17; Appendix B) (drop rates after AS level may not be applicable or meaningful depending on the model of provision used by the school/college)

With judicious use of other data sources, it should be possible to understand emerging patterns of subject choice to some extent. However, the complete picture for each cohort will not emerge until the NPD is available (six months after the cohort have taken their A level exams) because all other data sources have problems of scope. For example, PLAMS and ILR exclude students from independent schools, but from the survey carried out by UCAS (2015), it is apparent that these schools will exercise quite different options, being more likely than others to move to a programme designed around terminal exams even for subjects that are still modular between 2015 and 2017.

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Appendix A: HEFCE subject areas

This table is reproduced from a spreadsheet obtained from the HEFCE website
http://www.hefce.ac.uk/media/HEFCE,2014/Content/Analysis/Supply,and,demand/coverage-and-definition.xlsx

Group (HEFCE)	Sub-group (HEFCE)	JACS classifications used
Clinical subjects	Medicine and dentistry	JACS principal subject group A - Medicine & dentistry
	Veterinary sciences	JACS subject lines D1, D2 - Veterinary sciences
STEM	Anatomy and physiology	JACS subject line B1 - Anatomy, physiology and pathology
	Biological sciences	JACS principal subject group C - Biological sciences, excluding subject lines C6 - Sports science and C8 - Psychology, JACS subject line D7 - agricultural sciences, JACS subject line F4 - Forensic and archaeological sciences
	Chemistry	JACS subject lines F1 - Chemistry and F2 - Materials science
	Computer sciences	JACS principal subject group I - Computer sciences (2012-13 onwards), JACS subject lines G4 to G7, G02, G92
	Earth, marine and environmental sciences	JACS subject lines F6 - Geology and F7 - Ocean sciences and F9 - Others in physical sciences
	Engineering and technology	JACS principal subject groups H and J
	Mathematical sciences	JACS principal subject group G (2012-13 onwards), JACS subject lines G1 to G3, G01, G91
	Pharmacy and pharmacology	JACS subject line B2 - Pharmacy, toxicology and pharmacology
	Physics	JACS subject line F3 - Physics and F5 - astronomy
Modern foreign languages	Modern languages: Eastern, Asiatic and African	JACS principal subject group T - Eastern, Asiatic, African, American and Australasian languages, literature and related, excluding subject lines T7 - American studies and T8 - Australasian studies
	Modern languages: European	JACS principal subject group R - European languages, literature and related subjects
Agriculture and forestry	Agriculture and forestry	JACS principal subject group D, excluding subject line D1, D2 - Veterinary sciences and D7 - Agricultural sciences

Group (HEFCE)	Sub-group (HEFCE)	JACS classifications used
Arts, humanities and social sciences	Architecture, built environment and planning	JACS principal subject group K - Architecture, building and planning
	Area studies	N/A
	Business, management and administrative studies	JACS principal subject group N - Business and administrative studies
	Creative arts and design	JACS principal subject group W - Creative arts and design
	Education	JACS principal subject group X - Education
	Geography	JACS subject lines F8 - Physical geographical sciences, L7 - Human and social geography
	Humanities and language-based subjects	JACS principal subject group Q - Linguistics, classics and related subjects, JACS principal subject group V - Historical and philosophical studies, JACS subject lines T7 - American studies and T8 - Australasian studies
	Media studies	JACS principal subject group P - Mass communications and documentation
	Nursing and subjects allied to medicine	JACS principal subject group B, excluding subject lines B1 - Anatomy, physiology and pathology, B2 - Pharmacy, pharmacology and toxicology
	Psychology	JACS subject line C8 - Psychology
	Social studies	JACS principal subject group L - Social, economic and political studies, excluding JACS subject line L7 - Human and social geography, JACS principal subject group M - Law
	Sports science	JACS subject line C6 - Sports science
Unknown and combined subjects		JACS principal subject group Z

Appendix B: A/AS level subject uptake for 2014

The table below contains full subject uptake information from Year 13 students in England for 2014, obtained from the National Pupil Database as described in section 3.1. Percentage uptake is calculated with respect to the A level cohort (that is, the total number of students with at least one A level) and the ONS cohort (the estimated number of 18 year olds in England). Three sets of figures are presented:

- For students with an A level in the subject, including the percentage of students with an A level who did not certificate the corresponding AS level
- For students with either an A or AS level, or both, in the subject
- For students with an AS level, but not an A level in the subject. The percentage of students who dropped the subject after AS (that is, did not take an A level in the subject) is also shown.

Subject	**A levels**				**A and/or AS levels**			**Separate AS levels**	
	N cands	***% of A level cohort***	***% ONS cohort***	***% without AS***	***N cands***	***% of A level cohort***	***% of ONS cohort***	***N cands***	***% dropped at AS***
Mathematics	63871	27.6	9.8	7.5	84463	36.5	12.9	20592	24.4
Biology	47148	20.4	7.2	5.1	66030	28.6	10.1	18882	28.6
Psychology	44075	19.1	6.7	2.6	62200	26.9	9.5	18125	29.1
History	41214	17.8	6.3	5.2	52447	22.7	8.0	11233	21.4
Chemistry	39672	17.2	6.1	5.7	56626	24.5	8.6	16954	29.9
English Literature	38368	16.6	5.9	5.4	48858	21.1	7.5	10490	21.5
Physics	27654	12.0	4.2	6.6	40978	17.7	6.3	13324	32.5
Geography	26207	11.3	4.0	6.0	34221	14.8	5.2	8014	23.4
General Studies	23192	10.0	3.5	4.1	46901	20.3	7.2	23709	50.6
Sociology	22858	9.9	3.5	0.8	29833	12.9	4.6	6975	23.4
Business Studies: Single	19669	8.5	3.0	4.9	25883	11.2	4.0	6214	24.0
English Language	19590	8.5	3.0	1.2	23856	10.3	3.6	4266	17.9
Economics	19143	8.3	2.9	9.1	26556	11.5	4.1	7413	27.9
Religious Studies	17503	7.6	2.7	6.6	23753	10.3	3.6	6250	26.3
Media/Film/Tv Studies	17156	7.4	2.6	1.4	21081	9.1	3.2	3925	18.6
English Language & Literature	11721	5.1	1.8	1.3	14449	6.2	2.2	2728	18.9
Art & Design (Fine Art)	11399	4.9	1.7	5.9	14303	6.2	2.2	2904	20.3
Mathematics (Further)	11064	4.8	1.7	21.4	16076	7.0	2.5	5012	31.2
Drama & Theatre Studies	10823	4.7	1.7	5.5	13188	5.7	2.0	2365	17.9
Art & Design (Photography)	10794	4.7	1.6	3.0	14034	6.1	2.1	3240	23.1
Government & Politics	10514	4.5	1.6	7.3	14095	6.1	2.2	3581	25.4
Physical Education/Sports Studies	10076	4.4	1.5	4.4	13568	5.9	2.1	3492	25.7
Law	8683	3.8	1.3	0.4	12008	5.2	1.8	3325	27.7
French	8156	3.5	1.2	9.7	13102	5.7	2.0	4946	37.7
D&T Product Design	7984	3.5	1.2	5.3	10520	4.6	1.6	2536	24.1

Subject	A levels				A and/or AS levels			Separate AS levels	
	N cands	% of A level cohort	% ONS cohort	% without AS	N cands	% of A level cohort	% of ONS cohort	N cands	% dropped at AS
Spanish	5897	2.6	0.9	11.0	8999	3.9	1.4	3102	34.5
Art & Design	5885	2.5	0.9	6.1	7326	3.2	1.1	1441	19.7
ICT	5877	2.5	0.9	2.5	8612	3.7	1.3	2735	31.8
Applied Business	4984	2.2	0.8	4.9	5871	2.5	0.9	887	15.1
Health & Social Care	4973	2.2	0.8	5.9	6059	2.6	0.9	1086	17.9
Film Studies	4920	2.1	0.8	1.4	6421	2.8	1.0	1501	23.4
Applied ICT	4578	2.0	0.7	2.9	6148	2.7	0.9	1570	25.5
Music	4344	1.9	0.7	7.0	5950	2.6	0.9	1606	27.0
Art & Design (Graphics)	3603	1.6	0.6	2.9	4525	2.0	0.7	922	20.4
Computer Studies/Computing	3312	1.4	0.5	2.3	5596	2.4	0.9	2284	40.8
Classical Civilisation	3244	1.4	0.5	10.4	4347	1.9	0.7	1103	25.4
German	3243	1.4	0.5	9.5	5211	2.3	0.8	1968	37.8
Art & Design (Textiles)	2932	1.3	0.4	3.2	3699	1.6	0.6	767	20.7
Applied Science	2201	1.0	0.3	1.5	2949	1.3	0.5	748	25.4
Music Technology	2070	0.9	0.3	2.7	2858	1.2	0.4	788	27.6
Logic/ Philosophy	2065	0.9	0.3	5.2	3685	1.6	0.6	1620	44.0
Accounting/Finance	2041	0.9	0.3	1.9	3302	1.4	0.5	1261	38.2
Geology	1777	0.8	0.3	3.4	2315	1.0	0.4	538	23.2
Business Studies & Economics	1749	0.8	0.3	9.1	2168	0.9	0.3	419	19.3
Dance	1743	0.8	0.3	1.1	2181	0.9	0.3	438	20.1
D&T Textiles Technology	1478	0.6	0.2	2.2	1892	0.8	0.3	414	21.9
Communication Studies	1313	0.6	0.2	1.0	1869	0.8	0.3	556	29.7
Chinese	1249	0.5	0.2	33.9	1517	0.7	0.2	268	17.7
Travel & Tourism	1247	0.5	0.2	3.1	1603	0.7	0.2	356	22.2
Latin	1219	0.5	0.2	23.7	1764	0.8	0.3	545	30.9
D&T Food Technology	1045	0.5	0.2	1.5	1416	0.6	0.2	371	26.2
Performing Arts	982	0.4	0.2	0.7	1181	0.5	0.2	199	16.9
Use of Mathematics	953	0.4	0.1	0.2	1795	0.8	0.3	842	46.9
Environmental Science	787	0.3	0.1	0.5	1286	0.6	0.2	499	38.8
Electronics	772	0.3	0.1	6.9	1032	0.4	0.2	260	25.2
History of Art	741	0.3	0.1	37.0	937	0.4	0.1	196	20.9
Russian	675	0.3	0.1	33.5	746	0.3	0.1	71	9.5
Critical Thinking	597	0.3	0.1	2.2	9536	4.1	1.5	8939	93.7
Expressive Arts & Performance Studies	595	0.3	0.1	1.0	731	0.3	0.1	136	18.6
Polish	581	0.3	0.1	8.6	679	0.3	0.1	98	14.4
Art & Design (3d Studies)	541	0.2	0.1	3.7	736	0.3	0.1	195	26.5
Mathematics	538	0.2	0.1	4.3	863	0.4	0.1	325	37.7

Subject	A levels				A and/or AS levels			Separate AS levels	
	N cands	% of A level cohort	% ONS cohort	% without AS	N cands	% of A level cohort	% of ONS cohort	N cands	% dropped at AS
(Statistics)									
Italian	537	0.2	0.1	15.3	762	0.3	0.1	225	29.5
Ancient History	536	0.2	0.1	4.7	823	0.4	0.1	287	34.9
World Development	503	0.2	0.1	3.6	1268	0.5	0.2	765	60.3
Social Science: Citizenship	484	0.2	0.1	1.0	2177	0.9	0.3	1693	77.8
Leisure & Recreation	348	0.2	0.1	2.9	414	0.2	0.1	66	15.9
Turkish	316	0.1	0.0	11.7	369	0.2	0.1	53	14.4
Archaeology	290	0.1	0.0	.	487	0.2	0.1	197	40.5
Home Economics: Food	278	0.1	0.0	9.0	381	0.2	0.1	103	27.0
Media: Communication & Production	274	0.1	0.0	.	328	0.1	0.1	54	16.5
Arabic	252	0.1	0.0	17.1	356	0.2	0.1	104	29.2
Classical Greek	244	0.1	0.0	34.8	311	0.1	0.0	67	21.5
Applied Art & Design	243	0.1	0.0	6.6	303	0.1	0.0	60	19.8
Classics (General)	230	0.1	0.0	33.5	300	0.1	0.0	70	23.3
D&T Systems & Control	228	0.1	0.0	10.1	339	0.1	0.1	111	32.7
Portuguese	225	0.1	0.0	11.6	288	0.1	0.0	63	21.9
Urdu	219	0.1	0.0	17.8	287	0.1	0.0	68	23.7
Art & Design (Critical Studies)	213	0.1	0.0	4.7	303	0.1	0.0	90	29.7
Applied Engineering	205	0.1	0.0	2.4	275	0.1	0.0	70	25.5
Japanese	152	0.1	0.0	19.7	204	0.1	0.0	52	25.5
Anthropology	141	0.1	0.0	.	351	0.2	0.1	210	59.8
Punjabi	112	0.0	0.0	6.3	178	0.1	0.0	66	37.1
Modern Greek	101	0.0	0.0	21.8	129	0.1	0.0	28	21.7
Persian	97	0.0	0.0	23.7	106	0.0	0.0	9	8.5
Science in Society	75	0.0	0.0	.	621	0.3	0.1	546	87.9
Additional Mathematics	72	0.0	0.0	47.2	245	0.1	0.0	173	70.6
Dutch	72	0.0	0.0	22.2	85	0.0	0.0	13	15.3
Mathematics (Pure)	32	0.0	0.0	18.8	314	0.1	0.0	282	89.8
Modern Hebrew	29	0.0	0.0	27.6	45	0.0	0.0	16	35.6
Bengali	22	0.0	0.0	31.8	27	0.0	0.0	5	18.5
Other Classical Languages	22	0.0	0.0	4.5	27	0.0	0.0	5	18.5
Gujarati	11	0.0	0.0	9.1	18	0.0	0.0	7	38.9
Humanities: Single	1	0.0	0.0	.	15	0.0	0.0	14	93.3

Appendix C: Summary of qualifications

The table below contains details of the qualifications presented in section 4. Details have been gathered from UCAS Tariff Tables, the UCAS Qualification Information Profiles (QIPs) document for 2014[37], the Ofqual Register of Regulated Qualifications[38], and the websites of the awarding bodies.

Qualification	*Guided Learning Hours*	*Qualification size (A levels)*	*First awarded*	*Notes*
GCE A level	360	1.0	1951	
GCE AS level	180	0.5	2001	
Applied GCE Single Award	360	1.0	2007 (VCE 2002)	Successor to VCE A levels
Applied GCE AS level	180	0.5	2006 (VCE 2002)	Successor to VCE AS levels
Applied GCE Double Award	720	2.0	2007 (VCE 2002)	Successor to VCE A levels (double award)
Applied GCE AS level Double Award	360	1.0	2006	
Applied GCE A level / AS level combined	540	1.5	2007	
Extended Project (Diploma)	120	0.5	2009	Originally part of 14–19 Diploma (Level 3), now offered as standalone qualification
Principal Learning (Diploma) - Level 3	540	1.5	2011	Originally part of 14–19 Diploma (Level 3), now offered as standalone qualification
Pre-U Principal Subject	380	1.1	2010	
Pre-U Short Course Subject	180	0.5	2010	
International Baccalaureate	1460[39]	Full time programme	1968	Formally known as the IBO Level 3 International Baccalaureate Diploma
Key Skill at Level 3	45[40]	0.1	2002	
Advanced Extension Award	—	No additional teaching	2002	Withdrawn in 2009 except in Mathematics (in which it is available until June 2015)
Free standing Maths Qual L3	60	0.2	2003 (in current form)	

[37] Available at https://www.ucas.com/sites/default/files/ucas-qips-uk-benchmark-qualifications%20%282%29.pdf

[38] Available at http://register.ofqual.gov.uk/

[39] This value is obtained from UCAS tariff tables; the UCAS QIP and Ofqual Register state 2045 hours.

[40] Some of these qualifications are listed with no guided learning hours in the Ofqual Register.

Qualification	*Guided Learning Hours*	*Qualification size (A levels)*	*First awarded*	*Notes*
OCR Cambridge Technical Certificate L3	180	0.5	2014	Replacement for OCR Nationals L3
OCR Cambridge Technical Introductory Diploma L3	360	1.0	2014	Replacement for OCR Nationals L3
OCR Cambridge Technical Subsidiary Diploma L3	540	1.5	2014	Replacement for OCR Nationals L3
OCR Cambridge Technical Diploma L3	720	2.0	2014	Replacement for OCR Nationals L3
OCR Cambridge Technical Extended Diploma L3	1080	3.0	2014	Replacement for OCR Nationals L3
VRQ Level 3	Various	Various	Various	Covers various vocationally-related qualifications
OCR National Certificate L3	360	1.0	2004	The OCR National Level 3 qualifications expired in 2012, but top-up qualifications for candidates (for example, from a Certificate to a Diploma) were still available
OCR National Diploma L3	720	2.0	2004	
OCR National Extended Diploma L3	1080	3.0	2004	
BTEC Award Level 3	Below 180	Below 0.5	1984	
BTEC Certificate Level 3	180	0.5	1984	
BTEC Diploma Level 3	360 (Subsidiary Diploma)	1.0	1984	
	540 (90-credit Diploma)	1.5	1984	
	720 (Diploma)	2.0	1984	
	1080 (Extended Diploma)	3.0	1984	
Asset Languages Advanced (Level 3)	50	0.3	2005	Withdrawn: last session (resits only) was in November 2013[41]
QCF Language Qual Parent Level 3	139	0.4	2010	OCR Level 3 NVQ Certificates in French, German & Spanish
Other General Qualification at Level 3	Various	Various	Various	Covers various qualifications. The majority of entries in this category in the NPD are for the Pearson Edexcel Level 3 Award in Algebra (60–70 guided learning hours)

[41] http://web.archive.org/web/20131212092640/http://www.ocr.org.uk/qualifications/by-type/asset-languages/