A-LEVELS 2017
CHANGES AND TRENDS

Alan Smithers

Centre for Education and Employment Research
University of Buckingham
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Summary

- The first 13 reformed A-levels, with tougher content and end-of-course exams, come on stream in 2017. This is a reversion to what existed before 2002. The results at that time suggest that it could lead to a fall in grades overall, but boys improving their position relative to girls.
- Ofqual, the regulator, is committed, however, to consistency over time so may keep the grades similar by requiring fewer marks to achieve them.
- The likelihood of UK grades overall remaining much the same is increased by the 13 A-levels being less than one third of the total, and A-levels in Wales and Northern Ireland not changing.
- Trends to 2016, therefore, suggest that the pass rate will again be close to 98%, but the recent drift downwards in the top grades is likely to continue.
- The trends also show that girls are ahead in grades A*-C and A*/A, but at A* itself boys are ahead. Paradoxically, girls are ahead at A* in the great majority of subjects (27 out of 35 in 2016). But many more boys do maths and further maths and do better in them, and these subjects awarded by far the most A*.
- The popularity of subjects has been consistent over the past two decades with seven subjects appearing in the top ten in 1996, 2006 and 2016. The exception is general studies, third in 1996, and second above maths in 2006, which has collapsed due to increasing doubts about its value. It is due to be discontinued in 2019.
- Northern Ireland is does considerably better at A-level than either England or Wales, but while Wales was ahead of England in 2006 it has now been overtaken.

1. Changes in 2017

1.1. Reformed A-levels in eleven subjects (with three versions of English) – art and design, biology, business, chemistry, computer science, economics, English language, English literature, English language and literature, history, physics, psychology and sociology – have been taken in 2017 for the first time.

1.2. They differ from their immediate predecessors in three main ways.

- **Content** has been **beefed up** with more emphasis on: mathematics in the sciences, economics and business; programming, algorithms and problem solving in computer science; breadth in history; and drawing in art and design[1].
- **Assessment** will be **at the end of the two-year course**, rather than modular, so that the Advanced Subsidiary (AS) will no longer count towards the A-level result.
- Assessment will be entirely by **examination** in the sciences, psychology and sociology, and business and economics. In English, history and computer science it will contribute fourth-fifths of the marks. Art and Design is the exception having no examination, but 40% awarded on controlled assessment.

Likely Impact on Results

1.3. Other things being equal, these changes could be expected to **lower the pass rates** across the grades in 2017.

- When assessment switched from end-of-course to modular in 2002 the pass rate leapt by 4.5 percentage points and A grades by 2.1 percentage points. With the return to exams, some reversal could be expected.
- The courses and examinations will be new to schools and colleges, and performance tends to improve as people become more familiar with them.

1.4. We might also expect to see **boys' performance to improve relative to girls'** since the large gap in favour of girls opened up as A-levels became modular with assessment increasingly by course work.

1.5. But these likely consequences may not emerge in the grades awarded for several reasons.

- Ofqual, the exams regulator, has since 2011 adopted statistical procedures to **keep the percentages of grades similar** from year to year. It did this to squeeze out inflation. If it adopts the same approach this year, the percentages at the various grade levels could be

[1] Association of Colleges (February 2015) *Information for Schools and Colleges: Implementing A Level Reforms.*

kept consistent with previous years by awarding the same grades on fewer marks.

- Although the examinations in 11 subjects have changed this year, those in the **remainder have not,** including maths and further maths, which are the big contributors to A* and A grades.

- The changes apply only to England. Wales and Northern Ireland, which account for about eight per cent of the entries have their own regulatory authorities. Here the modular structure and coursework will remain, with the AS contributing two-fifths of the marks to the A-level result.

Other Factors Affecting Pass Rates

1.6. Within Ofqual's statistical model the two main things which could lead to results going up or down are, first, the cohort's performance in the GCSE two years earlier indicating that it was more or less able than its predecessors and, secondly, changes in the composition of the cohort, say a different subject mix or age distribution.

1.7. The 2015 GCSE results were little different from those of the previous year. But Chart 1.1 shows that there are fluctuations in the provisional entries (which are close to those actually sitting the exam). It is hard, however, to predict from them what the impact on the results will be. Entries for maths, in which a lot of A* are awarded, are up, while entries for English, where relatively few A* are awarded, are down. This might suggest that the percentage of A* would go up this year, but if maths is expanding with weaker students, its percentage of top grades might fall, and, conversely, if the English entry is more self-selected its percentage might go up.

Chart 1.1: Provisional UK Entries 2017 (as of 19 April)

Subject[1]	Provisional Entries 2016	2017	%Change	%A* in 2016
Maths	93,140	95,940	+3.0	17.5
English	84,490	79,450	-6.0	5.7
Biology	62,620	63,320	-0.5	9.3
Psychology	59,210	59,580	+0.6	5.2
History	54,530	50,520	-7.4	5.4
Chemistry	51,810	52,650	+1.7	8.4
Art &Design	43,360	44,040	+1.6	12.2
Geography	36,220	37,780	+4.5	6.0
Physics	35,350	36,720	+3.9	8.8
Sociology	34,080	37,780	+4.7	5.6
All[2]	864,920	858,870	-0.3	8.1

1. Ten most frequently taken subjects.

2. Entries overall; not just those shown.

Things To Look Out For

1.8. It will be interesting to see when the actual results are published on 17 August how these contrary indicators play out.

- Do grades fall in the reformed A-levels, but remain more or less the same in those that have not changed?
- Does the move back to end-of-course examinations in the reformed A-levels alter the relative performance of boys and girls?
- Is the pattern of results across the countries of the UK affected by England reforming its A-levels and Northern Ireland and Wales not doing so?

What Could Happen in 2017?

1.9. If we accept there are no clear hints from the GCSE results two years earlier or the provisional entry figures, we are left with the conundrum: will grades come down this year because the content and the exams have been toughened, or will Ofqual ensure that the awarding bodies keep the pattern of grades more or less the same by adjusting the number of marks necessary to achieve a particular grade.

1.10. The latter is perhaps the more likely because Ofqual is committed to consistency from year to year. It is also the case that not all exams have been toughened, and exams are now different in England from those in Wales and Northern Ireland which retain the old approach.

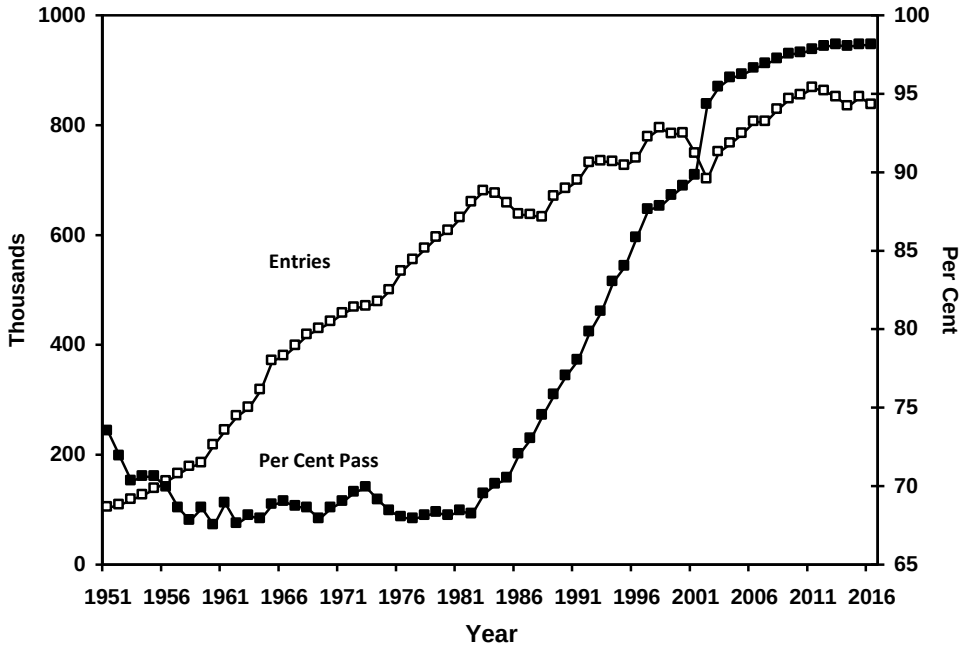
1.11. What this might mean for the grades awarded we can attempt to infer from the trends up to 2016 in subject entries, the gender pattern, subject grades and differences between the countries. Each of these is examined in detail in the following sections.

2. Trends to 2016

2.1. The trend line (black squares) in Chart 2.1 clearly shows the leap of 4.5 percentage points in the pass rate when all A-levels were converted in 2002 to a modular format, with the AS (Advanced Subsidiary) examination as a half-way house. Now that A-levels are being switched back, with 13 of the exams changing in 2017, there could be a reversal in the grades awarded.

2.2. But Chart 2.1 also shows that the pass rate is controlled. It is possible to discern three distinct phases in A-level pass rates: (1) 1951 to 1982, when there was a plateau at around 70% because the pass rate had been set at that level; (2) 1983 to 2010, when the pass rate rose from 68.2% to 97.6% because the limit had been removed; and (3) 2011 to the present, when the pass rate remains at about its 2011 level of 98%. The seemingly inexorable rise in the middle phase led Ofqual, the regulator, to attempt to call a halt by imposing statistical controls. If it adopts the same approach in 2017, conversely, it could keep up grades which otherwise the tougher exams would cause to fall.

Chart 2.1: Trends in A-Level Take-Up and Passes (A-E)



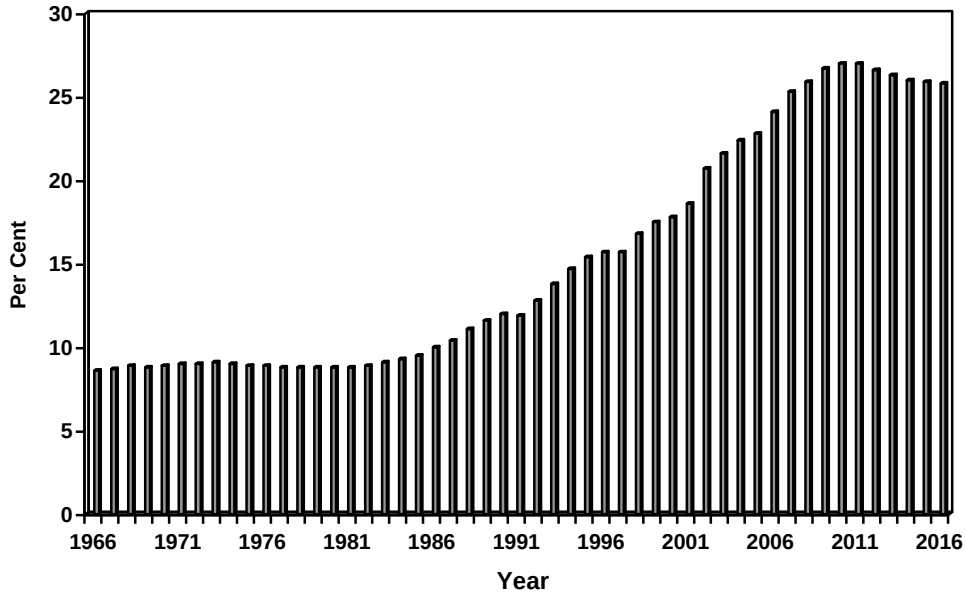
Top Grades

2.3. So far we have been focusing on the overall pass rate, but just passing these days is not enough to get into the leading universities, which require top grades.

2.4. At first A-levels were pass/fail, with outstanding performance recognised by a distinction. Grading was introduced in 1964. In Chart 2.2 we can see that passes at grade A follow the same path as the pass rate overall. From 1966 to 1982 (the first two years have been omitted to have a convenient five-year scale for the axis), the proportion of As was limited; from 1983 to 2010 it went up each year trebling from 9.1% in 1983 to 27.0% in 2010. But, in the third period, the percentage of A-grades

(now subdivided with an A*) falls back somewhat from 27.0% to 25.8% in 2016 as a result of Ofqual regulation.

Chart 2.2: Trend in A/A* Grades



2.5. Because there were so many A grades that they no longer distinguished sufficiently well, an A* was introduced in 2010. Chart 2.3 shows that the overall proportion of this new top grade has been held close to 8%.

Chart 2.3: Trend in A*

Year	% A*	%A*/A
2010	8.1	27.0
2011	8.2	27.0
2012	7.9	26.6
2013	7.6	26.3
2014	8.2	26.0
2015	8.2	25.9
2016	8.1	25.8

2.6. But, as we shall be seeing in Chapter 5, there is considerable variation between subjects.

3. Subject Entries

3.1. The pattern of A-level entries has changed over the years. Chart 3.1 shows the ten most frequently taken in 1996, 2006 and 2016. English has been consistently in the top two, although now overtaken by maths. General Studies, the attempt to introduce some breadth to A-level studies, was prominent in 1996 and 2006, but had dropped to 19th place in 2016. The decline in interest is because it no longer counts towards league tables or is accepted as an entry qualification by the leading universities. In fact, it is in terminal decline - literally - coming to an end in 2019.

Chart 3.1: Top Ten A-Level Entries

1996		2006		2016	
English	86,627	English	86,640	Maths	92,163
Maths[1]	67442	General Studies	58,967	English	84,710
General Studies	63,454	Maths	55,982	Biology	62,650
Biology	51,891	Biology	54,890	Psychology	59,469
History	43,355	Psychology	52,621	History	54,731
Geography	42.876	History	46,944	Chemistry	51,811
Chemistry	40,455	Art & Design	41,989	Art & Design	43,242
Art & Design	33,782	Chemistry	40,064	Geography	36,363
Physics	32,801	Geography	32,522	Physics	35,344
Sociology	29,871	Media/Film/TV	30,648	Sociology	33,980

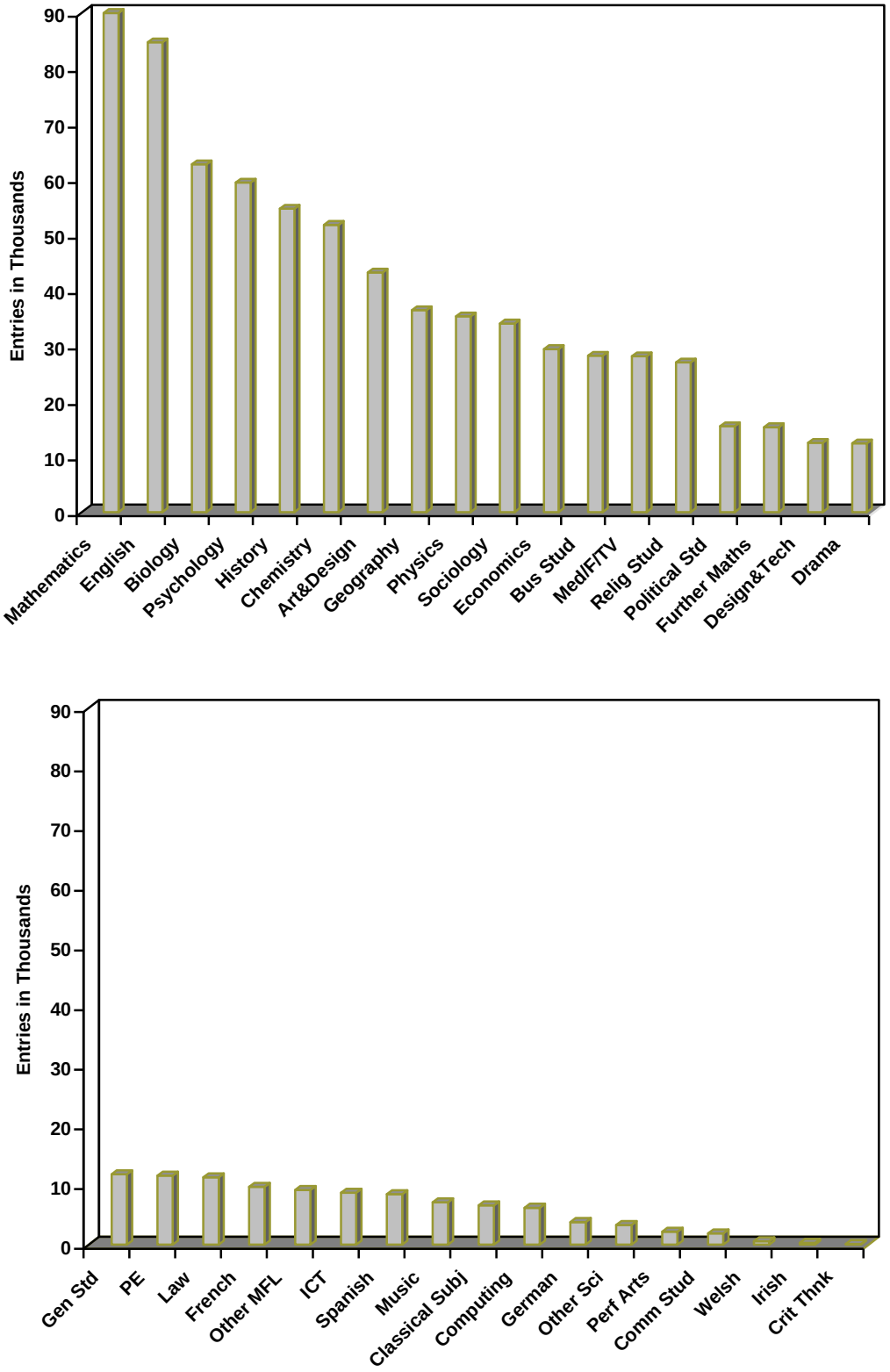
1. Includes further maths

3.2. As well as maths and English, five other subjects appear in all three lists - biology, history, chemistry, art & design and geography. The two decades have seen the rise and rise of psychology. From 13th in 1996, it climbed to 5th in 2006 and 4th in 2016. Physics, sociology and general studies also appear twice, and media/film/TV makes the top ten once, in last spot, in 2006.

3.3. But there is not a single foreign language in the list. Chart 3.2 shows that French is still the most frequently taken, but it is down in 22nd spot out of the 35 subject groupings (omitting 'all other subjects'). Spanish is 26th and German 30th, while 'other modern languages' is in 23th place.

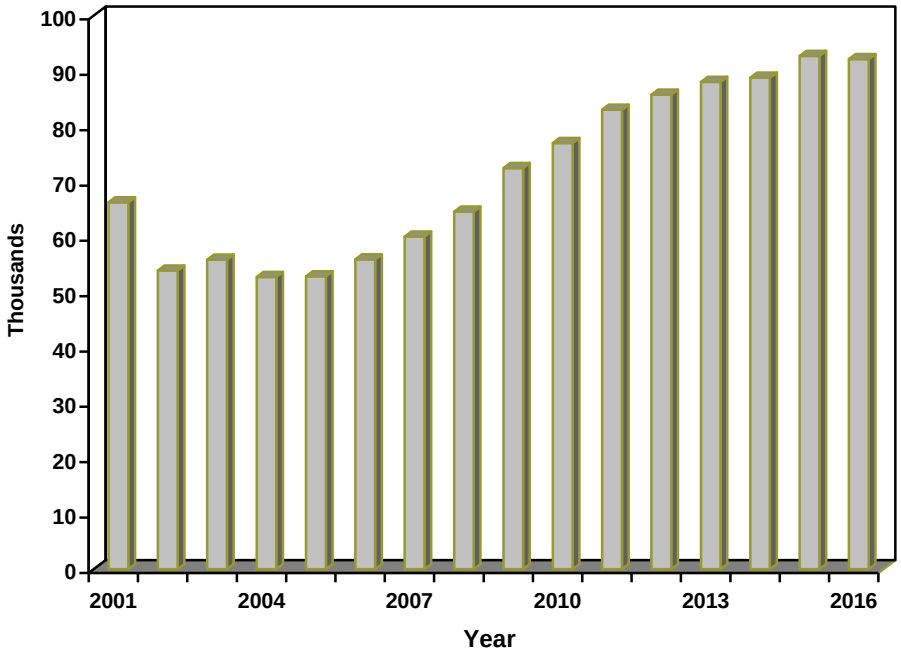
3.4. Chart 3.2 brings out the huge range in entries in 2016, from 92,163 in maths and 84,710 in English to 117 in critical thinking and 1,851 in communication studies (leaving aside the 331 in Irish and 610 in Welsh which are confined to those countries).

Chart 3.2: Subject Entries 2016



3.5. Charts 3.3 and 3.4 show the trends in take-up of two subjects which have been a source of concern. Maths was examined on a new specification in 2002 and entries fell appreciably. This was claimed to be because the first year of the course was too demanding. Steps were taken to ease it in 2004, since when entries have risen year by year, to the extent that it has become the most frequently taken A-level, though with some slipping back in 2016 for the first time in more than a decade.

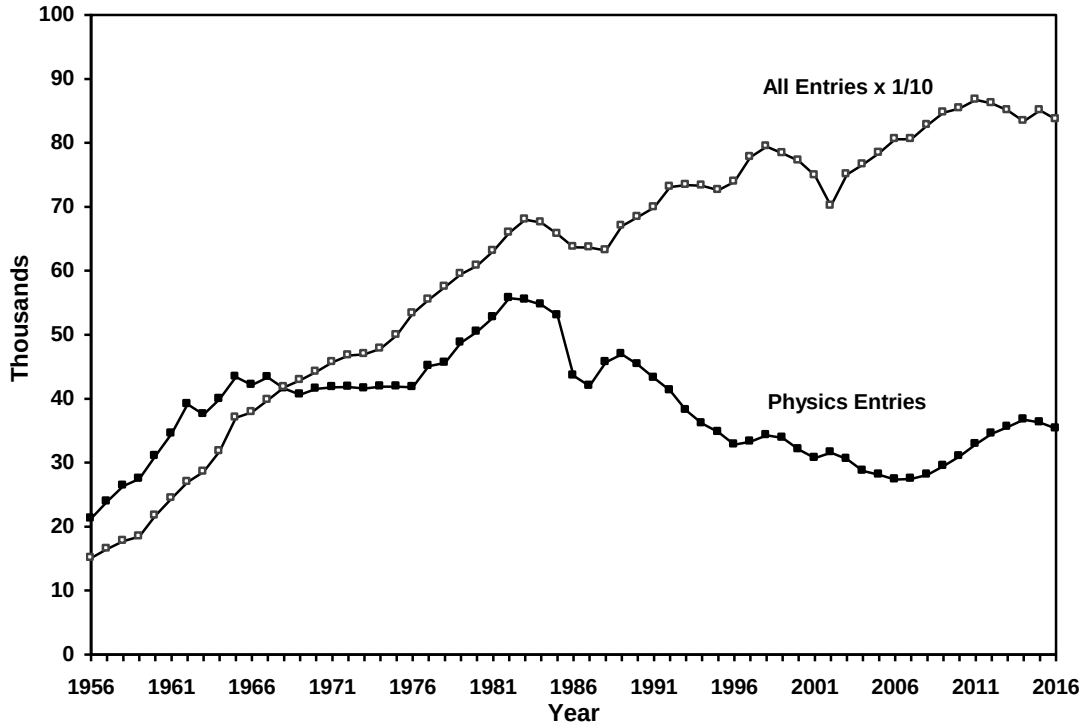
Chart 3.3: Trend in Numbers Sitting A-Level Maths



3.6. Chart 3.4 takes the long view of physics entries and shows them in relation to the total. Until 1983 physics more or less kept pace with the growth overall, and both fell with the drop in the number of 18-year-olds from 1983. But, whereas entries overall began to pick up again from the late 1980s (even though the 18-year-old population was still going down), physics was affected by the changes stemming from the newly introduced national curriculum. This turned physics, chemistry and biology into a subject called science, and the GCSEs were changed in line with this. The science GCSEs proved to be a much less effective platform for A-level studies in physics than the old physics O-level had been. In part, this was because, with physics teachers being very hard to come by, national curriculum science was often taught by biologists.

3.7. Gordon Brown, when Chancellor of the Exchequer, as part of his Science Investment Strategy 2004, incentivised schools to return to the separate sciences and that seems to have borne fruit in an increase in A-level physics take-up, although as Chart 3.4 shows, take-up is nowhere near back to the numbers of the early 1980s. The recent recovery stalled somewhat in 2015 with numbers falling further in 2016.

Chart 3.4: A-Level Physics Entries 1956-2016



Provisional Entries 2017

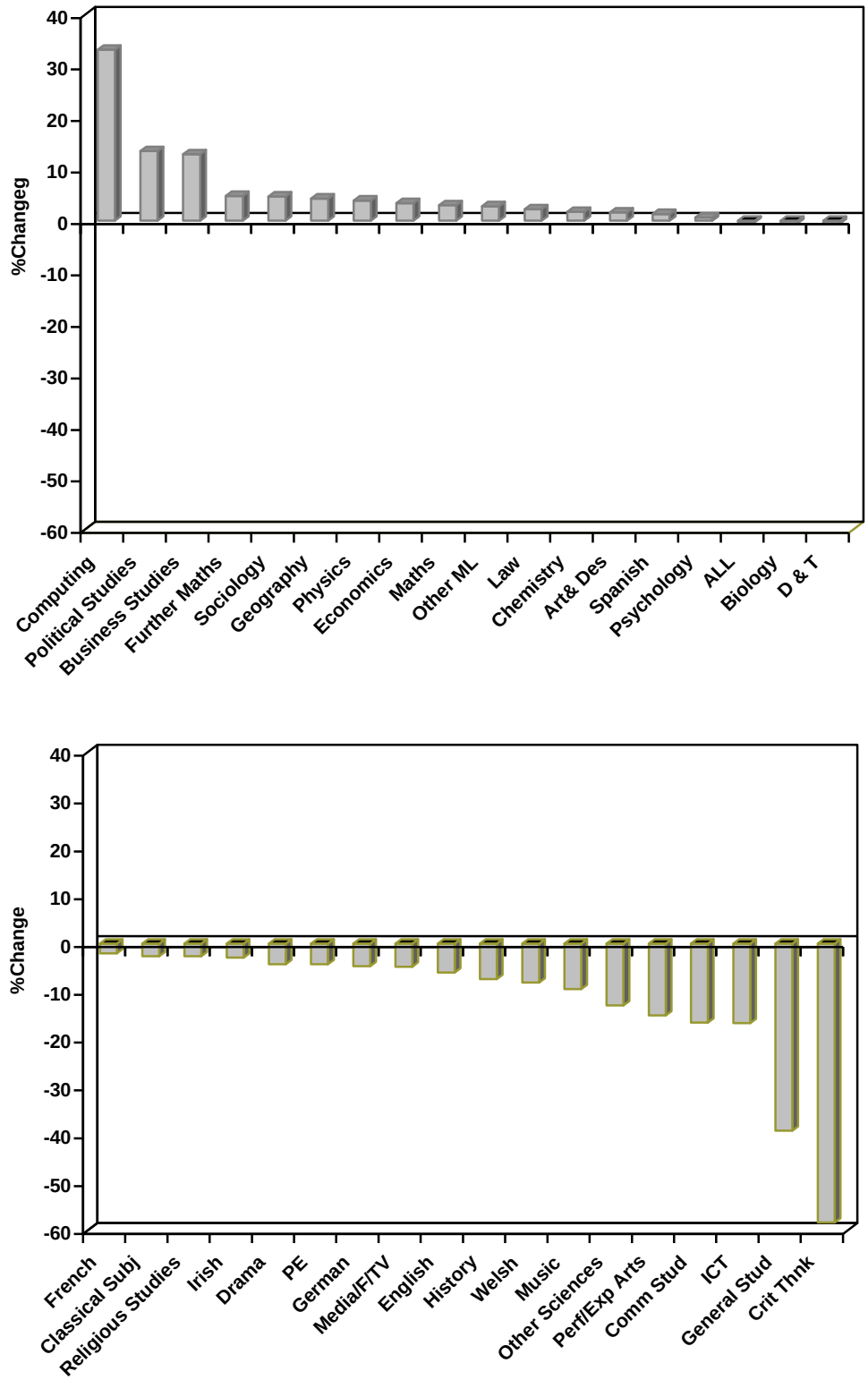
3.8. An important factor influencing the pattern of results as controlled by Ofqual is the composition of the cohort. We can get some idea of how the numbers have changed since Ofqual now publishes the provisional entries as of mid-April[2]. These are close to, but not identical with, the numbers actually sitting the examinations. Overall entries were down by 0.3% which is less that the estimated[3] fall of 1.0% in the mid-year population of 18-year-olds in England and Wales.

3.9. Chart 3.5 shows the changes in entries[4] for the individual subjects. There is a wide range from computer science, which is up by 33.2% to critical thinking which is down by 58.3% to only 50 candidates. Other big fallers were general studies (down 39.1%), ICT (down 16.6%) and communication studies (down 16.5%), which like A-level critical thinking are being phased out.

3.10. Besides computing, political studies (up 13.5%) and business studies (up 12.9%) increased the most. Broadly speaking, maths, the sciences and the social sciences tended to show gains, while languages, the humanities and the arts tended to fall.

[2] Ofqual (16 June 2017). *Summer Exam Entries for GCSEs, Level 1/2Certificates, AS and A Levels: provisional figures April 2017*.
[3] Calculated from ONS figures for mid-year estimates of the numbers of 17-year-olds in England and Wales in 2016 and 2015.
[4] England, Wales and Northern Ireland combined.

Chart 3.5: Change in Provisional A-level Entries[1] from 2016 to 2017



3.11. Ofqual also provides information on provisional entry figures by country and by age group. Of the provisional entries, 91.5% are from England, 4.1% from Wales and 4.4% from Northern Ireland. In most subjects, the entries are overwhelmingly from Year 13 pupils. Overall, 87.1% are from this age group. The remainder comprise

11.8% from Year 14 and above, 0.9% from year 12 and just 0.2% from younger ages.

3.12. But some subjects have anomalous patterns. In 'other modern languages', only 44.7% of the provisional entries are from Year 13 pupils; 30.7% come from younger pupils, and 24.7% from older people suggesting that these A-levels are taken mainly by native speakers. In critical thinking, 60% of the entries are from Year 13 and 40% from Year 14 and above. One hundred per cent of the general studies entries are from Year 13.

4. Gender

4.1. Girls outperform boys at GCSE by a considerable margin, but at A-level they have moved ahead only relatively recently.

Chart 4.1: Girls' Lead at A*-C

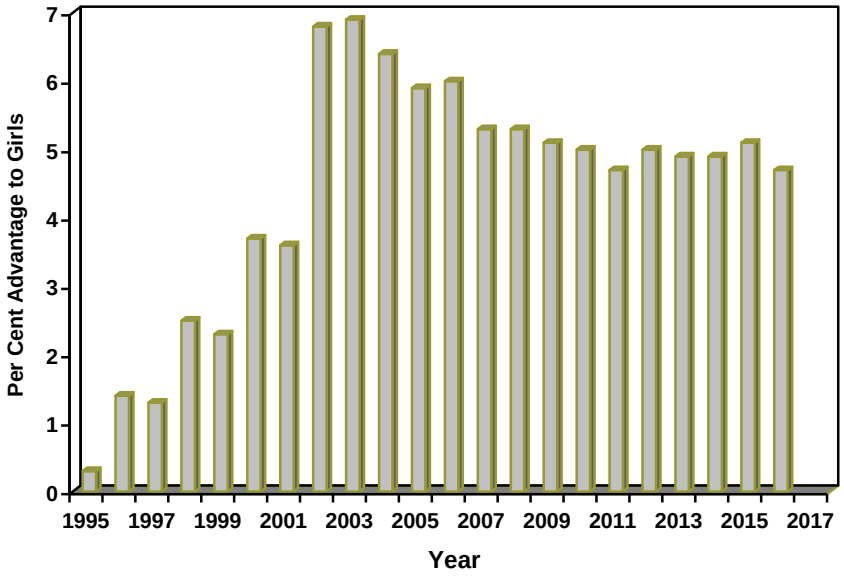
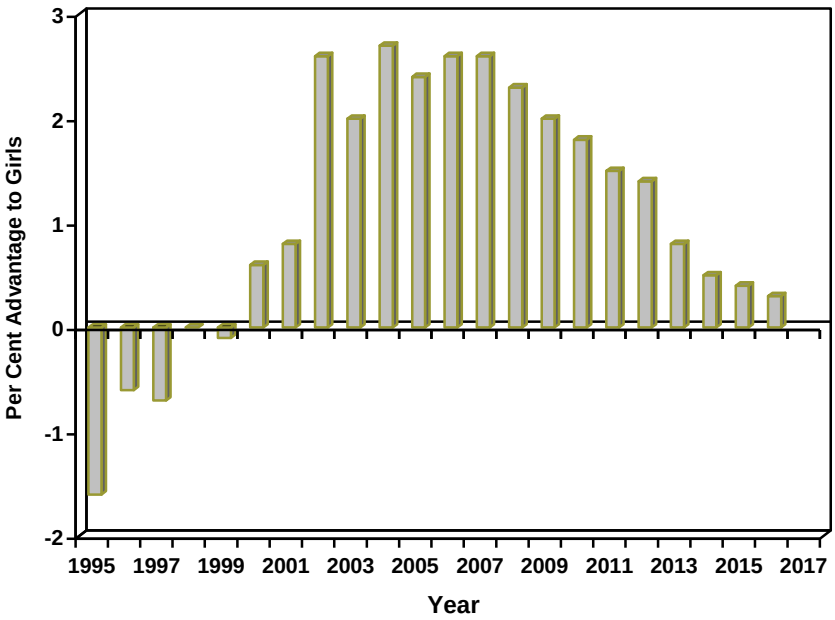


Chart 4.2: Girls' Lead at A*/A



4.2. Chart 4.1 shows that in terms of A*-C there was only a slight difference of 0.3 percentage points in 1995 and that this steadily increased to 3.6 percentage points in 2001, but following modularisation in 2002, the difference leapt to 6.8 percentage points, since when it has drifted back to settle at close to 5 percentage points.

4.3. At A*/A the boys were actually ahead in 1995 by 1.6 percentage points. But Chart 4.2 shows they were gradually overhauled by the girls and following modularisation in 2002 their lead surged to 2.6 percentage points. From this high point, the difference in favour of girls has gradually eroded so that in 2016 it was only 0.3 percentage points.

Chart 4.3: Comparison at A*

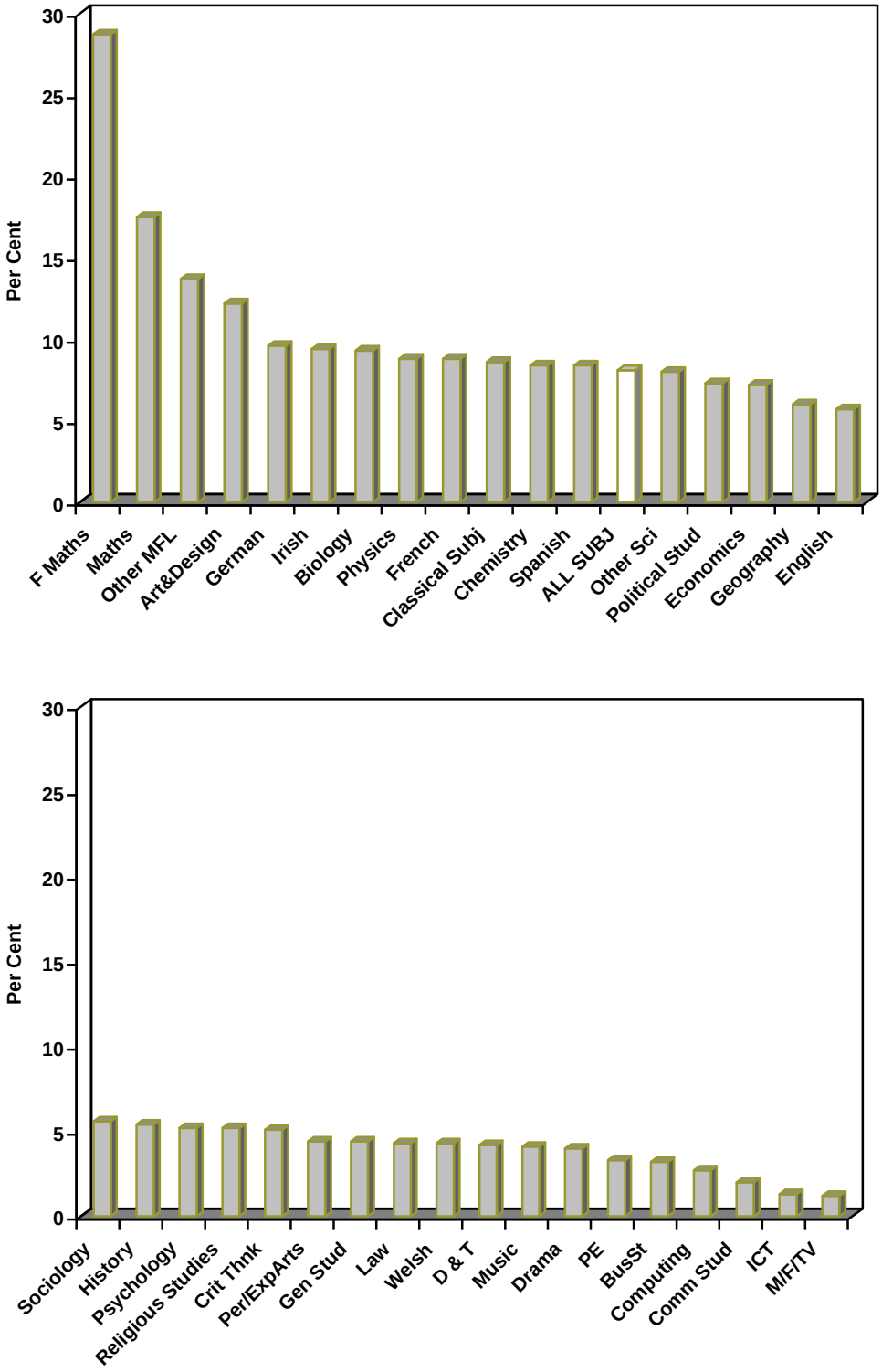
Year	%Males	%Females	Advantage to Males
2010	7.9	8.3	-0.4
2011	8.2	8.2	0.0
2012	8.0	7.9	0.1
2013	7.9	7.4	0.5
2014	8.5	7.9	0.6
2015	8.7	7.8	0.9
2016	8.5	7.7	0.8

4.4. Grade A* at A-level is unusual in that it is the boys who do better overall. In the first year of this grade, as Chart 4.3 shows, the girls were ahead by 0.4 percentage points, but since then the advantage has gradually passed to boys who in 2016 were 0.8 percentage points to the good. But the boys are not ahead at this level in the majority of the subjects. As we shall be seeing in Chapter 5, the overall lead is due to more boys taking, and doing better in, the big awarders of A* - maths and further maths.

5. Subject Grades

5.1. The percentage of A* awarded varies greatly with subject.

Chart 5.1: A* by Subject in 2016



5.2. Chart 5.1 shows that in 2016 the percentage of A* ranged from, at one end, 28.7% in further maths, 17.5% in maths and 13.7%, in 'other modern languages' to, at the other, 1.2% in media, film and TV, 1.3% in ICT, and 2.0% in communication studies.

5.3. The range seems to reflect a difference between those subjects where it is possible to be sure of the right answer and those like English, psychology and sociology, which are more subjective. There is also no reason to suppose that the abilities of the candidates will be uniform across the subjects. Take further maths, for example, only those who knew from maths that they were good at the subject would be likely to take the more demanding version.

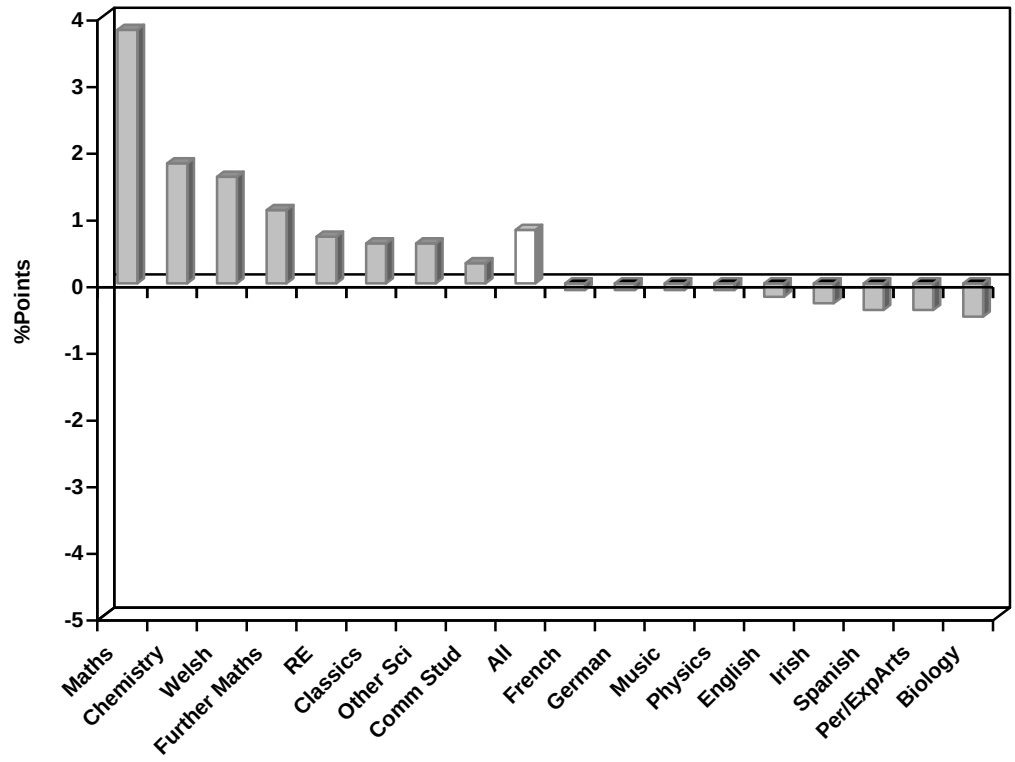
5.4. Boys seem to be drawn more to the subjects where there are right answers. Chart 5.2 shows that they were in the majority by a large margin in further maths and maths, the subjects which yielded the highest percentages of A*. The boys also did better in these subjects. Girls, on the other hand, seemed more inclined towards subjective subjects, and although they tended to do better there than boys, relatively few A* were awarded in them.

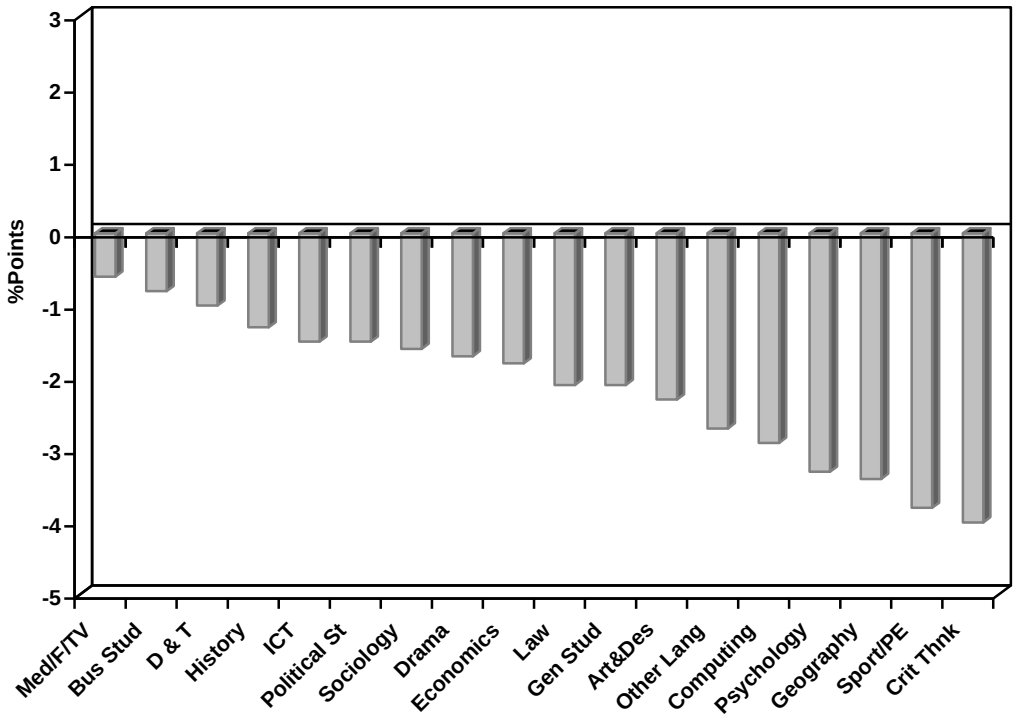
Chart 5.2: Entries and A* in Selected Subjects, 2016

Subject	Entries		%A*			Number A*	
	Male	Female	Male	Female	Diff	Male	Female
Maths	56,353	35,628	19.0	15.2	3.8	10,707	5,415
Chemistry	25,937	25,874	9.3	7.5	1.8	2,412	1,941
Further Maths	11,054	4,203	29.0	27.9	1.1	3,206	1,173
Religious Studies	8,215	18,817	5.7	5.0	0.7	468	941
Classical Subjects	2,714	3,867	9.0	8.4	0.6	244	325
Other Mod Lang	3,898	5,311	12.1	14.8	-2.7	472	786
Computing	5,633	609	2.4	5.3	-2.9	135	32
Psychology	14,085	45,384	2.7	6.0	-3.3	380	2,723
Geography	18,172	18,191	4.3	7.7	-3.4	781	1,401
Physical Education	7,100	4,527	1.8	5.6	-3.8	128	254

5.5. Chart 5.3 shows the percentages of A* awarded for the whole range of subjects. Boys were, in fact, ahead in only eight of the 35 subject categories ('all other subjects' has been omitted). But these included the high scoring ones.

Chart 5.3: Boys' Lead at A* by Subject





5.6. In Chapter 3 we saw that the superior performance of boys at A* was something of an anomaly. At other grades above C girls tended to be ahead. It could perhaps be inferred that more boys are exceptionally talented. But their lead, in fact, depends on their subject choices. It arises from them to be more likely to take and do better in maths and further maths and to do better in chemistry, subjects in which the highest percentages of A* grades are awarded.

6. Countries of the UK

6.1. Whether we look at A*-C grades, as in Chart 6.1, or A*/A grades as in Chart 6.2, Northern Ireland is streets ahead of England and Wales. This high level of performance, underlined by its scores in PISA and TIMSS international comparisons, does not receive the attention that it deserves, perhaps because there is a reluctance to find that it has anything to do with Northern Ireland having a grammar school system.

Chart 6.1: Change in A*-C Grades 2006-16

Countries	2006			2016		
	Males	Females	All	Males	Females	All
Northern Ireland	80.0	84.1	82.4	81.5	84.9	83.4
Wales	70.0	76.3	73.5	70.2	76.6	73.8
England	67.7	73.4	70.8	75.0	79.6	77.5

Chart 6.2: Change in A*/A Grades 2006-16

Countries	2006			2016		
	Males	Females	All	Males	Females	All
Northern Ireland	30.1	34.0	32.4	27.2	31.3	29.5
Wales	21.0	26.3	23.9	22.0	23.3	22.7
England	22.5	24.9	23.8	25.8	25.9	25.8

6.2. But the relative positions of England and Wales have changed over the pasteat pressure on schools through league tables to improve performance. Wales, on the other hand, seems to have gone backwards at A*/A, perhaps because there has not been the same emphasis on test-taking.

6.3. Girls continued to be well ahead in terms of A*-C in all three countries, but the gap at A*/A narrowed between 2006 and 2016 in both England and Wales although in different ways. In England, it was because boys had improved more than girls at this level, but in Wales it was because the girls had fallen back. In Northern Ireland the A*/A awards also fell - by 2.9 percentage points over the decade - with boys and girls showing similar decreases.