course. However, this does not prevent early entry, as it will still be possible to take the final exams in the summer of year 10 (from June 2014 onwards). This may mean fewer candidates certificate early because there are fewer opportunities to do so. However, it is also possible that more candidates will certificate early, because it will no longer be possible to take individual units early and then re-sit them later in the course as required. Instead, candidates may sit all their exams early, so that they then have the opportunity to re-sit if required.

References

Department for Education (2011). *Early entry to GCSE examinations*. Available online at: https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR208.pdf (Accessed 14 May 2012).

Gill, T. (2010). *How old are GCSE candidates? Statistics Report Series No. 20*. Cambridge: Cambridge Assessment.

Vidal Rodeiro, C. L. & Nadas, R. (2012). Effects of modularity, certification session and re-sits on examination performance. *Assessment in Education: Principles, Policy and Practice*. **19**, 4, 411–430.

Reaching for the A*: Exploring the extent and effect of resitting at A level

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Introduction

The introduction of Curriculum 2000 changed the traditional linear structure of A levels to a modular structure, and introduced an integrated AS level qualification, comprising half of the modules and set at the standard expected of A level students after one year of study (Tomlinson, 2002). This reform afforded candidates opportunities to resit individual modules to improve their grades, using the best results obtained in each module to count towards the A level. However, there has been frequent criticism that this has led to a resit culture, with students resitting modules multiple times until they achieve their desired grade, leading to fears that students may be achieving high grades at A level by resitting. In November 2006 changes to A level specifications were agreed. These changes included the introduction of the new A* grade. The new specifications were first taught from September 2008, and the first of the new A* grades were awarded in June 2010. The new A* grade was introduced to differentiate between the highest achieving candidates so that universities could select the best candidates. The A* is awarded to candidates who fulfil two criteria. First, candidates must achieve at least 80% of Uniform Mark Scale (UMS) marks overall (i.e. an A grade), and must achieve 90% or more of UMS marks at A2. In an open letter to schools, Ofqual (2010) stated that this structure aimed to reward consistently good performance throughout the A level, and to reward exceptional performance at A2. This structure also aims to reduce the incentive to resit AS modules, because a lower threshold is needed at AS level than at A2.

This study investigated resitting patterns in five OCR GCE A level specifications with a particular focus on high achieving students who achieved the new A* grade.

Background

Despite the fact that the introduction of the opportunity to resit units, as part of modularisation, represented a major reform in the structure of A levels, there has been relatively little literature from government or the qualifications regulator on the intended purposes of allowing resitting at a unit level.

One obvious rationale, given the high-stakes nature of the A level, is that resitting gives students a chance to set the record straight if they performed less well than expected, wished for or 'deserved' following a bad day with a particular examination[1]. In 2007, Ken Boston, then Chief Executive of QCA, stated that 'candidates deserve a chance to demonstrate their ability if they failed to do so the first time' (MacLeod, 2007). This argument would apply to linear A levels too, albeit at a less fine-grained level. In a discussion of modularity in A levels, Dearing (1996) noted that one of the reported advantages of modular syllabuses is that they give 'an opportunity to resit a module and achieve, on merit, a better result through additional work' (p.90). This is a broader argument that allows for the role of unit assessment to be formative as well as summative, and arguably (depending on what is meant by 'additional work') accounts for the reinforcement of learning through coverage of related material in later units; however, taking advantage of maturational effects in this way could be seen by some as dubious. Gray (2002) argued that resitting was a legitimate and integral part of a modular assessment regime, and ultimately improved student attainment through mechanisms of feedback, multiple opportunity and motivation. When QCA removed a short-lived restriction on the number of resits per A level unit, it was for practical rather than ideological reasons, with the justification that results would not be greatly affected due to the low numbers likely to take advantage of multiple resitting (QCA, 2003b).

Poon Scott (2011) argued that the resit policy had unintended consequences, namely students and teachers devising elaborate resit strategies and an increased focus on the assessment process itself, which had a negative effect on student learning. There is a view commonly held, including by teachers (de Waal, 2009; Higton *et al.*, 2012), that a 'resit culture' has developed: because there is no penalty attached within the overall A level mark[2] for resitting units an unlimited number of times; students are entered for unit exams early to give them more test experience; and they resit as often as necessary to gain their desired

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1. Although with a broader purpose than the special consideration provisions for adjusting marks for candidates who, for example, are ill on the day of the examination or recently bereaved.

2. However, there are other penalties, as resitting has implications for cost, loss of teaching time, and some universities look less favourably on marks gained through resitting. In practice there are only a few opportunities to resit.

grade, effectively by attrition. Warnings and criticisms of a 'resit culture' date back to the introduction of the current A levels under the Curriculum 2000 reforms (QCA, 2003a). In this view, AS units are favoured for resitting as they are easier than A2 units but contribute equally to the overall A level. However, as Gill and Suto (2012) describe, there are more opportunities available to resit AS units so higher resit rates are not unexpected. Additionally, Gill and Suto (2012) found that the situation was nuanced: while students and teachers were strategic in deciding whether and what to resit, very few students said they treated the first sitting of unit exams as a practice.

The inherent unreliability and measurement error of the assessment process means that many candidates will increase their scores, and sometimes grades, on a resit. However, when regression to the mean is taken into account (Smith and Smith, 2005) we should expect a clear increase in scores: essentially, resitting candidates are more likely to be those that have achieved below their true score at the first sitting, and randomness alone will tend to make their average increase. Wheadon (2010) simulated the impact of resitting a typical AS unit and found that, as expected, the rate of false negatives (candidates achieving less than their true ability) fell with each successive attempt at a test, but the rate of false positives (candidates outperforming their true grade) rose[3]. In addition, given that it is not possible to resit a unit until six months later, other effects such as maturation and coverage of related topics as part of other units may well contribute to an improvement.

In early investigations of resitting under the new Curriculum 2000 A levels, QCA (2003c) found that a substantial minority of students resat AS units once, and there was generally little resitting of A2 units. However, differences in A2 resitting were observed between subjects: 25–33% of candidates in Physics resat A2 units but candidates in French hardly resat. QCA attributed this difference to the common practice in science subjects of sitting the first A2 unit in the January session. Most students who did resit improved their marks. Further investigations were undertaken as part of a study of A level Mathematics (Matthews and Pepper, 2007) using awarding body data from six subjects. The study found that resit rates were higher in Mathematics than in the other subjects. Mathematics students were more likely to resit units multiple times than in other subjects, although there were also higher than average multiple resits in French, which the authors attributed to the benefits of maturation. There was very little multiple resitting of A2 units, except in Mathematics. The effect of resitting on the proportion of candidates awarded grade A was also estimated by calculating a notional A level grade using the AS result at the end of the first year of study[4]. This showed an increase of between 2.3 and 7.8 percentage points due to resitting.

Gill (2010) found that resitting had more of an effect on lower grades, essentially because there were more opportunities to increase a grade (from a grade C at first sitting, one can improve to a B, A or A*; from a grade A at first sitting, only an A* would be an improvement). Similarly, Wheadon (2010) found that resitting had less of an impact on A grade candidates than lower grades, although this analysis dates from before the introduction of the A*.

Empirical results from AQA A levels in 2011 (CERP, 2012) showed that the candidates achieving the best grades tended to resit the fewest units, and that resitting brought most benefit to the candidates with middle grades (B, C and D). We might expect, therefore, that candidates who have been awarded an A* in their A level would have resat fewer units than average, based on their high ability. QCA (2007) suggested that the design rules for A* should encourage a reduction in resitting, but a student or centre would need to feel confident that the A grade threshold was achievable in order to risk the lower level of AS resitting.

However, there has been feedback from teachers (QCA, 2007) that there are exceptional candidates who resit units in order to maximise their overall UMS mark (even in pursuit of a few extra marks) because of requirements for entry into higher education. This is not directly related to the A* grade but is an artefact of the availability of detailed mark scores. Williams (2009, pp.152–154) reported that many students aim for marks of 90% UMS in AS, in the belief that this is an unwritten requirement for Oxbridge and the top Russell Group universities. Gill (2010) observed a similar effect in GCSE units which some candidates resat, after achieving an A* unit grade, in order to obtain a 'good' A* and boost their overall grade.

Aims

This study aimed to compare the resitting patterns of students achieving the new A* grade with less highly achieving students across five contrasting A level subjects. In particular, we investigated two main areas: the extent of resitting across different grades, and the effect of resitting on the final grade and marks. The extent of resitting was examined to determine whether high achieving A* students were more or less likely to resit units than other candidates. Patterns of resitting were investigated with respect to the number of units resat by candidates achieving each grade and the probability of a candidate resitting given a previous mark. Since candidates may base their decision to resit a unit on the grade that they expect to achieve, we also examined the extent of resitting based on a student's forecast grade. It is also important to consider the effect of resitting, to determine whether students seem to be remediating an anomalous performance or capitalising on chance to improve their grade. We investigated the change in mark at the unit level, and the change in overall grade achieved by resitting. Since the A* is awarded using a different rule from other grades (which was designed partly to reduce the effect of resitting), we then focussed on whether resitting resulted in different patterns of achievement for candidates awarded an A* or A grade.

Methods

Five contrasting OCR A level specifications were analysed in this study:

- Chemistry A: H434
- History: H506
- English Literature: H471
- French: H475
- Art and Design (Fine Art): H561

All specifications comprised four units, except Chemistry which had six units.

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3. Wheadon's simulation results do not appear to be wholly consistent with the method described, which states that candidates would only resit if they achieved *below* their true grade. Hence, after repeated simulated tests one would expect the percentage of candidates with a grade *equal* to their true grade to increase or stay the same. However, the reported results show this percentage actually decreasing at the expense of false positives. Wheadon's false positive rate may therefore be overstated.

4. This could include some resitting of AS units first taken in January.

Three datasets were assembled for each of the specifications, containing all the unit-level results of candidates who certificated an A level for these specifications in 2012, along with the final A level grade. Note that candidates who were awarded an AS qualification only were excluded. The first dataset contained candidates' highest result for each unit (which would be the result cashed in), the second contained results from each candidate's first sitting of each unit, and the third contained marks from all sittings of each unit. Checks were performed to ensure that each candidate had the correct number of units.

When comparing performance at first sitting of a unit with that of the best performance ('before' and 'after' resit) we have implicitly assumed that the results obtained at the first sitting would reflect the situation if resits were not permitted. However, this may not be the case, especially if (as some have claimed) many students treat the first sitting as a practice.

Extent of resitting

Table 1 shows the percentage of candidates who resat one or more units for each subject. There is a wide variation in resit rates between subjects, with over half of candidates resitting at least one unit in Chemistry, History and French, but only 8% of candidates in Art and Design. The particularly high rate for Chemistry is likely to be because it is the only six-unit A level specification considered.

Equally clear is the difference in resit rates between grades. In each subject, candidates awarded an A* were less likely to have resat than those awarded an A, and much less likely than the average.

Table 1: Rates of resitting by subject

Subject	Total candidates	% candidates resitting		
		A*	A	All
Chemistry	18149	21.9	55.8	76.4
English Literature	10120	14.9	27.8	37.7
History	10810	36.4	44.2	59.5
French	1095	9.2	40.6	55.0
Art & Design	3719	1.7	4.7	7.7

Average units resat by grade

Figure 1 shows the average number of units resat (one or more times) by candidates awarded different A level grades. The size of each point represents the number of candidates awarded each grade.

There is a clear trend for the rate of resitting to be highest in the middle of the grade distribution, with a slight drop for the lowest grades, but with candidates awarded an A* hardly resitting at all. The highest resit rate for A* candidates was in History (0.46 units).

In general, candidates resat more AS units than A2, with the exception of Art and Design which had very low resit rates across both halves of the A level. The low rate of resitting in Art and Design is likely to be due to the nature of the assessment (most of the marks are gained via a coursework portfolio), and the limited opportunities to resit, because no assessment is available in the January sessions.

Resitting A2 units was more common in Chemistry than other subjects. Due to the six-unit specification, many candidates took one A2 unit in the January session of their final year, thus giving an opportunity to resit in June should this be desired. By contrast, for
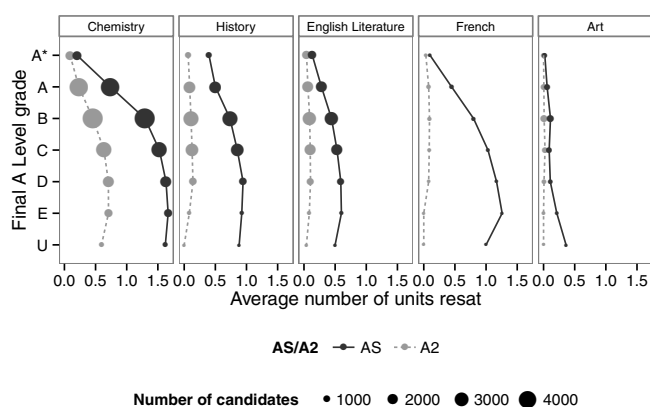

Figure 1: Average units resat by grade

History, English Literature and French, most candidates took all their A2 units in the June sessions.

Resitting decisions given a particular unit mark

One possible explanation for the low resitting rates for the candidates of highest ability, as observed in Figure 1, may simply be that because they would tend to get the best marks at a unit level, they would have less need to resit them. To examine this, plots are presented in Figure 2 showing resitting behaviour for all candidates *given the original mark obtained in each unit*, and similarly for A* and A candidates only.

Each point shows, for a given percentage UMS, the proportion of candidates obtaining that score (on their first sitting of the unit) who decided to resit the unit. It should be borne in mind that each point represents a different number of candidates: to deal with this to some extent, lines have been generated using Loess smoothing[5] weighted by the number of candidates. This gives an indication of the scores that different groups of candidates were comfortable with.

The plot has been cropped to focus on the area of interest (60–100% UMS). It is technically possible for candidates to obtain an A* by scoring an average of 60% UMS on their AS units and 100% on their A2 units, but this would be a risky strategy, so if candidates were aiming for an A* one would expect them to resit given marks of, say, below 60–80%. On the other hand, if candidates resat an AS unit after scoring marks of over 80%, it might indicate that they were trying to gain insurance against harder A2 units, or resitting opportunistically (perhaps during their A2 year) because they found this particular unit relatively easy.

Only AS units are shown; resitting patterns were different in A2, as candidates have to score at least 90% UMS on average to be awarded an A*, leaving little room for error: with two equally weighted units, the lowest mark that could be scored on one of them is 80% (with 100% in the other). Whether or not a candidate resits given a particular mark is therefore closely linked to whether they go on to achieve an A*.

In general, the proportion of candidates resitting decreases as the original mark increases, as one would expect. There was little resitting in response to original marks of 80% or more for most subjects. However, History F962 and French F702 were exceptions: in the French unit, 19% of candidates who scored 89% in the unit opted to resit.

The gradients of the lines for the Chemistry F323 practical unit are shallower than those for written unit F322, indicating that candidates

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5. Loess is a non-parametric regression method which avoids imposing a particular model on the data, and is thus well-suited for this exploratory analysis.
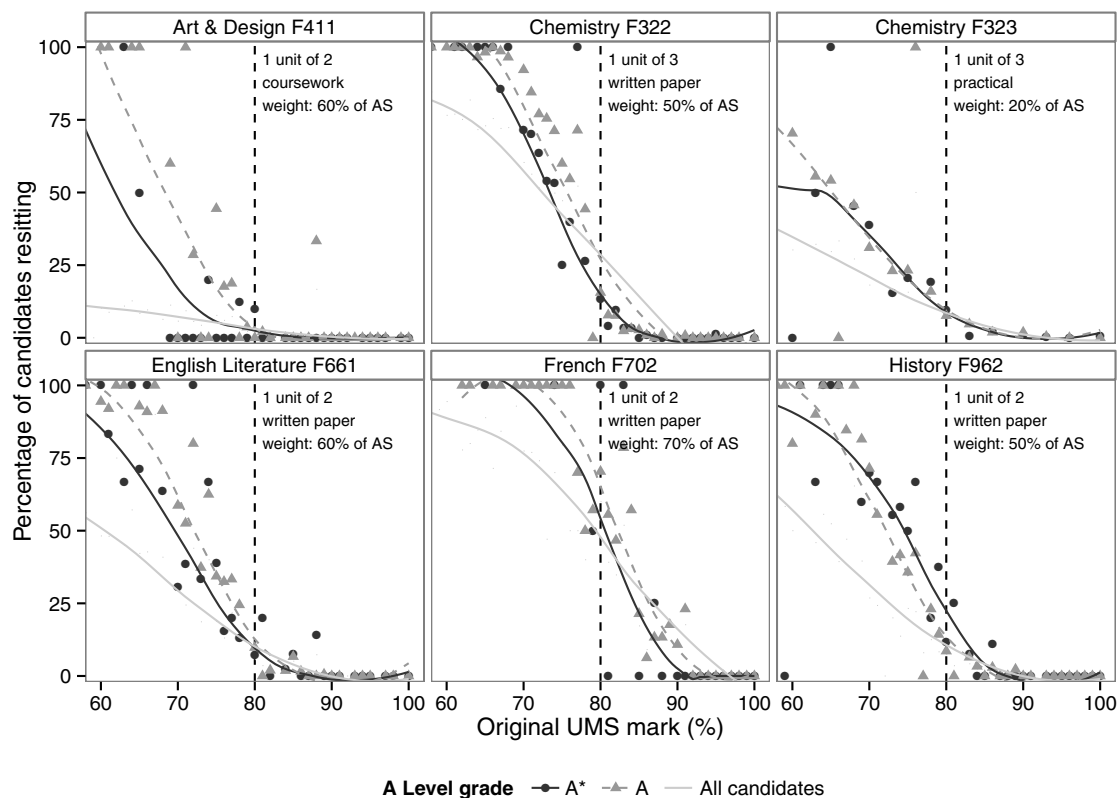
Figure 2: Probability of resitting given original mark, for selected AS units

were not so sensitive to the mark obtained in deciding whether to resit. This is likely to be due to the low weighting of unit F323, meaning that candidates can afford not to resit it and still go on to receive an A*, if they have performed well in the written units.

The Art and Design unit shows a pattern that is different again: overall resitting rates were very low for a particular mark compared to the other units shown here (including Chemistry F323), despite the high weighting of this unit. This may be due to the nature of the assessment (via a portfolio of coursework). However, the best candidates (those awarded A or A* at A level) showed similar resitting patterns as candidates in other units.

Given a particular mark, A* and A candidates were more likely to resit than average; that is, they were less likely to be 'happy' with a particular mark, as one would expect. However, in most of these units, there is little difference between the resitting behaviour shown by A* and A candidates; in fact, in most cases A* candidates were slightly *less* likely to resit, given a particular mark, than those awarded an A. One interpretation could be that A* candidates' resit rates were lower because they were concentrating on A2 units, and did not feel it necessary to shore up their AS results. Thus the lower resit rates could have been more likely to lead to the A*, rather than higher ability leading to lower resit rates.

Estimated grades

One common caveat for many of the foregoing analyses is that they are based on the eventual final grade achieved by a candidate. We can only tell from the results who actually achieved an A*, and not who was aiming for one, which might have a bearing on resitting decisions. Estimated grades are provided by the centre to the awarding body before the final examination session, which arguably reflect the beliefs and aspirations of the candidate and the centre, and thus govern resitting behaviour.

Figure 3 shows whether candidates who achieved (or surpassed) their estimated grade had different resitting patterns from those who did not[6].

There was very little difference in History, English Literature and Art and Design. However, in Chemistry and French, candidates who met their estimated grade had lower resit rates, except at grade E.

This suggests that the more unreliable performance of candidates who have already needed to resit may hinder them from achieving their estimated grade in some subjects.
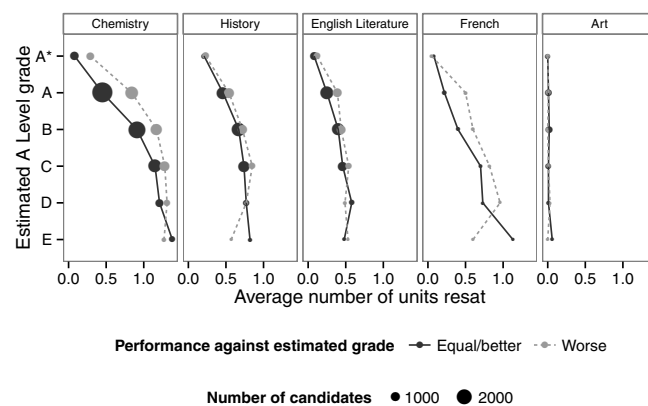

Figure 3: Comparison of resitting and estimated grades

Effect of resitting

Unit mark

Figure 4 shows the average difference between the original mark obtained and the best mark used for certification, across all candidates and units. By definition, this can never be less than zero. The size of each

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6. Resitting that occurred in the final session is not included in this calculation; it is restricted to events that had already occurred by the time the centre provided the estimated grades.
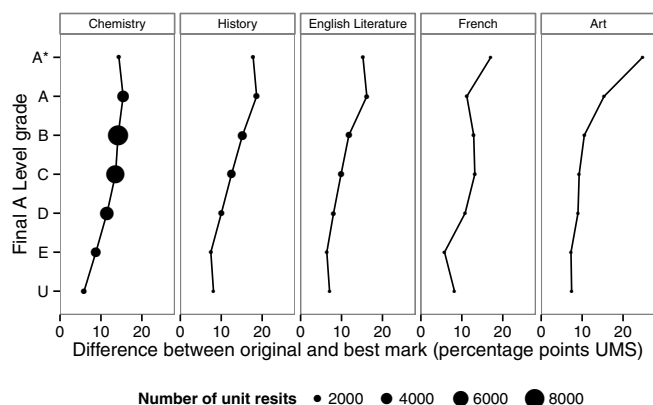
Figure 4: Difference between original and best mark

point represents the underlying number of unit resits used to calculate the average.

In all subjects, the higher ability candidates managed to increase their unit marks the most by resitting. The marks gained by A* and A candidates were similar in most subjects, with the exception of French and Art and Design.

Overall grades

Tables 2 to 6 below show the effect of resitting on overall grade distributions for each of these subjects, by recalculating grades based on the first sittings of each unit (which we have termed the 'original grade') and comparing to those actually awarded. The off-diagonal entries show where candidates improved their certificate grade by resitting units. Under the current rules, it is not possible to end up with a worse grade from resitting than the original (as the highest mark for each unit is used for certification), and hence the bottom left of each table is blank.

In all these subjects, resitting had the effect of increasing the numbers of candidates awarded A*, A and B, at the expense of the lower grades. The largest increases, in both absolute and relative terms, were seen for the A grade, but the increase for the A* grade was modest. The largest increase in the proportion of candidates awarded A* was in History (from 6.7% to 7.5%), whereas Chemistry had the largest increase at A (from 16.3% to 26.6%).

In most subjects, a few candidates managed to increase their overall grade substantially by resitting units: for example, one candidate in each of Chemistry and History would have obtained a D if the first sitting of each unit had been considered, but in fact went on to be awarded an A*.

Table 2: Original & final grade distribution for Chemistry

Grade (with resit)	Grade (original)								
	A*	A	B	C	D	E	U	Total	%
A*	1514	83	18	1	1	.	.	1617	8.9
A	.	2875	1255	135	20	6	.	4291	23.6
B	.	.	2859	1606	262	33	5	4765	26.3
C	.	.	.	1880	1287	230	17	3414	18.8
D	.	.	.	.	1215	870	99	2184	12.0
E	.	.	.	.	.	935	434	1369	7.5
U	.	.	.	.	.	.	509	509	2.8
Total	1514	2958	4132	3622	2785	2074	1064	18149	
%	8.3	16.3	22.8	20.0	15.3	11.4	5.9		

Table 3: Original & final grade distribution for English Literature

Grade (with resit)	Grade (original)								
	A*	A	B	C	D	E	U	Total	%
A*	1406	34	28	2	.	.	.	1470	14.5
A	.	1791	360	30	2	.	.	2183	21.6
B	.	.	2398	445	25	.	.	2868	28.3
C	.	.	.	1880	313	20	2	2215	21.9
D	.	.	.	.	952	122	2	1076	10.6
E	.	.	.	.	.	238	20	258	2.5
U	.	.	.	.	.	.	50	50	0.5
Total	1406	1825	2786	2357	1292	380	74	10120	
%	13.9	18.0	27.5	23.3	12.8	3.8	0.7		

Table 4: Original & final grade distribution for History

Grade (with resit)	Grade (original)								
	A*	A	B	C	D	E	U	Total	%
A*	723	36	49	2	1	.	.	811	7.5
A	.	1694	618	75	7	.	.	2394	22.1
B	.	.	2334	938	88	2	.	3362	31.1
C	.	.	.	1947	659	55	3	2664	24.6
D	.	.	.	.	969	255	6	1230	11.4
E	.	.	.	.	.	271	33	304	2.8
U	.	.	.	.	.	.	45	45	0.4
Total	723	1730	3001	2962	1724	583	87	10810	
%	6.7	16.0	27.8	27.4	15.9	5.4	0.8		

Table 5: Original & final grade distribution for French

Grade (with resit)	Grade (original)								
	A*	A	B	C	D	E	U	Total	%
A*	117	1	2	.	.	.	.	120	11.0
A	.	289	76	2	.	.	.	367	33.5
B	.	.	191	85	7	.	.	283	25.8
C	.	.	.	112	78	4	.	194	17.7
D	.	.	.	.	62	26	1	89	8.1
E	.	.	.	.	.	27	4	31	2.8
U	.	.	.	.	.	.	11	11	1.0
Total	117	290	269	199	147	57	16	1095	100.0
%	10.7	26.5	24.6	18.2	13.4	5.2	1.5		

Table 6: Original & final grade distribution for Art and Design

Grade (with resit)	Grade (original)								
	A*	A	B	C	D	E	U	Total	%
A*	540	.	5	.	.	.	.	545	14.7
A	.	758	26	2	.	.	.	786	21.1
B	.	.	1047	36	4	.	.	1087	29.2
C	.	.	.	712	20	.	.	732	19.7
D	.	.	.	.	401	5	1	407	10.9
E	.	.	.	.	.	138	3	141	3.8
U	.	.	.	.	.	.	21	21	0.6
Total	540	758	1078	750	425	143	25	3719	
%	14.5	20.4	29.0	20.2	11.4	3.8	0.7		

Table 7: Comparison of extent of resitting and effect on overall grades

Subject	All candidates			Candidates with an A based on first sittings		
	Total candidates resitting	Candidates increasing overall grade	As % of resitters	Total candidates resitting	Candidates increasing overall grade	As % of resitters
Chemistry	13862	6362	45.9	1062	83	7.8
English Literature	3817	1405	36.8	248	34	13.7
History	6437	2827	43.9	394	36	9.1
French	602	286	47.5	72	1	1.4
Art and Design	288	102	35.4	9	0	0.0

In Chemistry, there were far more candidates who moved up to an A* from an A than from a B or lower. The numbers were similar for English Literature, but for History there were more candidates who moved up from a B than from an A. There are two possible reasons for this: first, History students may benefit more from maturational effects, thus being able to make a dramatic improvement towards the end of the course by resitting earlier units. English Literature and History, in particular, require essay writing skills which will develop over the course. Secondly, in all subjects apart from Chemistry most candidates sat both their A2 units for the first time in the final session, so there was less opportunity to resit A2 units. As such, most candidates would only have been able to increase their grade by resitting AS units, meaning that those who achieved an overall A* must have come from a B grade or lower. This is an artefact of the A* rule and the imbalance of opportunity to resit at A2.

Table 7 compares the number of candidates resitting with the number who increased their overall grade by doing so, which might crudely be deemed a success rate for resitting. However, not all resitting will be with the aim of actively increasing the overall grade: some candidates may have resat in an attempt to shore up their grade and reduce the risk of ending up with a lower grade. As shown in Table 7, under half of all resitting was successful in increasing a candidate's overall A level grade, but this rate was much lower for those candidates who would have been awarded an A, on the basis of their first sittings. For the group of all candidates, the rates were remarkably similar across subjects.

Overall mark

Figure 5 shows the total UMS marks obtained by each candidate in both AS and A2, as a percentage of those available (300 marks in Chemistry; 200 in other specifications). The horizontal line shows the threshold of 90% UMS marks at A2, and the sloping solid line shows the A grade boundary, a total of 80% of UMS marks across both AS and A2. To obtain an A* it is necessary to meet both these conditions, so candidates awarded an A* lie in the top right region of the graph. Three scatter plots are presented for each subject. The first two plots show only those candidates who have resat one or more units, and compare the UMS totals derived from the best marks scored in each unit and used for certification ('After resitting') with the totals that would have been obtained had the marks from the first sitting of each unit been used ('Original mark'). The third scatter plot shows the final marks used for certification by all candidates (including those that did not resit any units). The points corresponding to each candidate are shaded according to the actual A level grade obtained. For clarity, only those candidates awarded an A*, A or B in the A level are shown on the plots.

The plots give a visual overview of the effect of resitting: points lying outside their 'zone' in the first plot for each subject indicate that the

candidate has increased their grade through resitting. Of particular interest are the points above the 90% horizontal line, but to the left of the A* region in the top right hand corner. In all subjects there are points visible in this area in the first plot (corresponding to the marks awarded on the first sittings of each unit), but most candidates were able to increase their AS marks. Thus the second plot for each subject shows very few candidates in this area. In the final plot it can be seen that in Art and Design, English Literature and History some candidates ended up certificating with a B grade because of this.

A further finding of interest is that the nature and strength of the relationship between AS and A2 marks differed between subjects: for French, AS marks were generally higher than A2 across all grades, whereas for Chemistry this tendency was reduced for candidates of the highest ability, and for English Literature AS marks were more similar to A2 marks. Chemistry also exhibited a high degree of correlation ($r=0.85$) between AS and A2 marks, and as a result the cluster of candidates on the scatterplot representing all candidates was much tighter than English Literature and History, for example, which had lower correlations (0.76 and 0.65 respectively). This has implications for the possibility of being awarded a B while gaining over 90% of the A2 marks.

Discussion

Resit rates for candidates who were awarded an A* at A level were approximately half the average, and markedly less than those for A candidates (which were around 80% of average). The finding that more able candidates resit less often is consistent with previous research (Gill, 2010; CERP, 2012) and has a number of possible interpretations: performance of excellent candidates could be intrinsically more reliable, or an isolated lower mark may be of less concern to better candidates as they know they will still end up with a good grade. Alternatively, it may be harder to move up a grade through resitting if performance at these levels is qualitatively different. The starred grade was perhaps also not seen as so important if students were on track to go to their chosen university, as those offers that required an A* typically did not specify the subject, so candidates just missing out on an A* grade in one subject may have achieved one in another.

French and Chemistry had much lower resit rates for A* candidates than the average for all candidates. The resit rate for French was particularly low, perhaps indicating that A* candidates achieved a particular degree of mastery of this subject which meant resitting was rarely required; the corresponding rate for A candidates was very close to the overall trend. In addition, French is one of the subjects that is most often dropped after AS (Gill, 2009) and this has implications for the
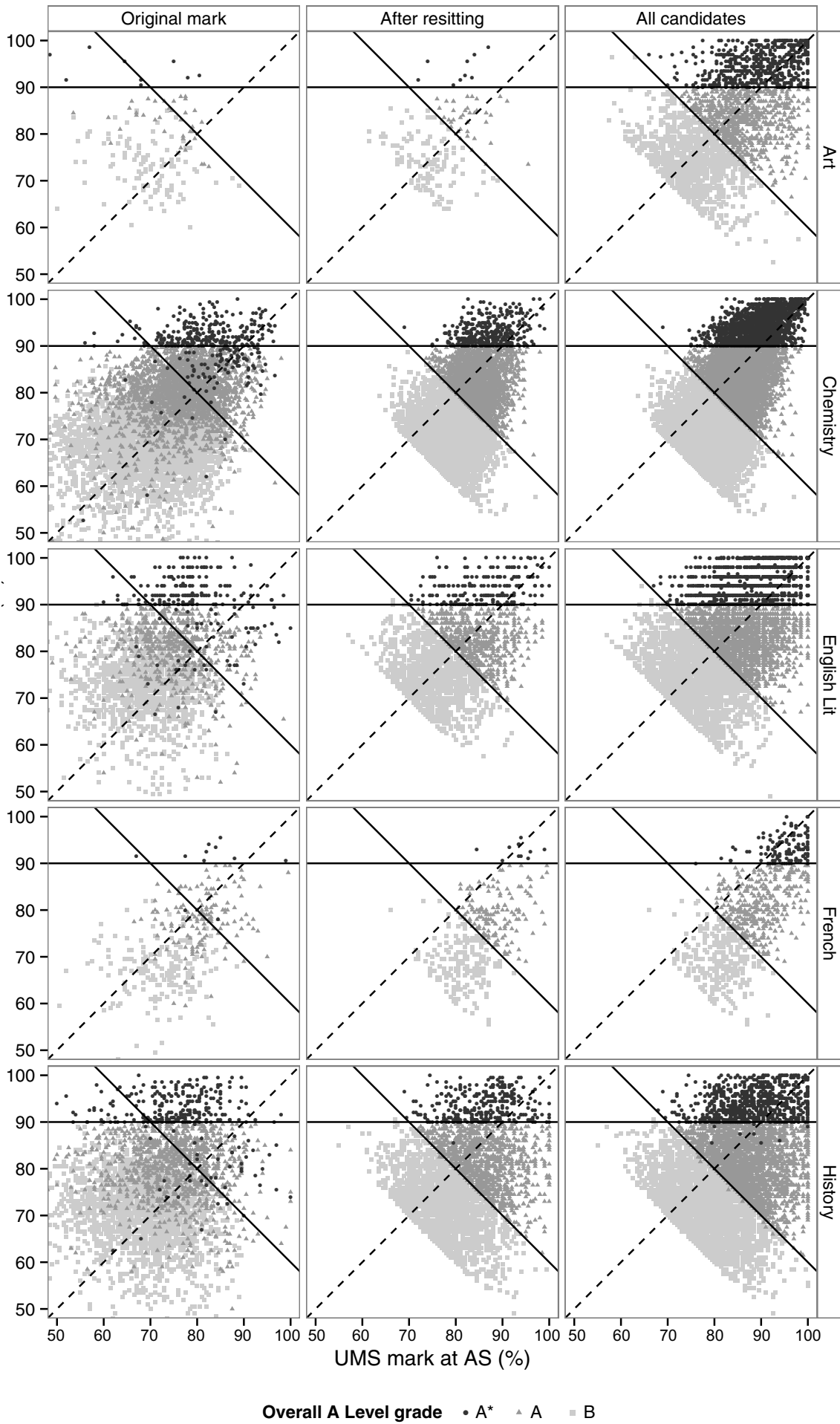
Figure 5: Plots of AS and A2 marks for resitters and all candidates

cohorts taking each half of the A level, which might have affected awarding.

As with the rest of the cohort, A* candidates were more likely to resit AS units than A2 units, which is probably chiefly due to opportunity: many A2 units are taken in the final June session which makes resitting impractical.

We examined the resitting decisions given a particular mark on the first sitting of the unit, and found that A* candidates were in general little different from A candidates in their decision to resit AS units given a unit mark. One finding of interest was that some AS units (such as History F962 and French F702) were resat by candidates after achieving marks of over 80% in the first sitting. Attempting to score a higher mark than this would have little effect on their chances of achieving an A* (unless they performed poorly on another AS unit and were in danger of being awarded a B). It is possible that these candidates misunderstood the A* criteria, but it is most likely that they were seeking insurance against the harder A2 units to ensure they got an A. This was predicted by QCA (2007) along with the suggestion that some excellent candidates would resit in pursuit of a few extra marks to satisfy higher education admissions requirements. Neither of these concerns relates directly to the design of the A*, but rather to the availability of detailed mark scores. A remark made by one of Poon Scott's (2012) interviewees, a student at an independent college, is particularly telling: "My teachers said there's nothing really to lose if you resit because you still have your old grade. Even when you have an A, there's always a better A." (p. 441). In History unit F962, those candidates who eventually went on to get an A* were more likely to have done this than those who got an A, perhaps showing evidence of perfectionism rather than aversion to risk. This is a peculiar feature of modularisation and is due to the time delay between the assessments – in a purely linear A level there would be no opportunity or need to do this.

The net effect of resitting was to increase candidates' unit marks, as expected given the contribution of regression to the mean, the rule that the best unit performance is used for certification, and maturation and further learning between sittings. For most subjects, candidates awarded the A* showed the highest average increase in unit marks between sittings (comparing the first to the best sittings), which is consistent with previous findings by Al-Bayatti and Jones (2003) that candidates with higher mean GCSE scores exhibited the highest increase in marks between sittings of AS units. One explanation for this result could be that better candidates tended to resit because they had had a 'bad day' and wished to correct their performance, rather than taking advantage of the inherent variability of the assessment process to try to gain a few marks and therefore push their mark over a grade boundary. Alternatively, maturation may have a different effect at different points on the ability scale. However, this result should be treated with some caution as large increases in unit marks will tend to have the effect that a candidate's overall grade will increase, so such candidates are less likely to have obtained a U, for example.

Across the whole A level, resitting did not have a large impact on the percentage of candidates awarded an A*: the increase in all subjects considered here was under one percentage point. The proportion of candidates moving up a grade through resitting (throughout the grade distribution) was strongly associated with the proportion of candidates resitting in each subject: approximately half of resitters increased their overall grade by doing so, with this ratio remarkably consistent between

subjects. This is somewhat lower than perceptions from teachers: in de Waal's (2009) survey, most teachers thought that more than half of their students (that is, not just as a proportion of those that had resat) had improved their overall grade through resitting, and 30% of teachers thought that 80% of their students had improved their overall grade. While our study does not cover all subjects, is based on new specifications as opposed to the old six-unit versions and is restricted to OCR candidates, there does seem to be a gulf between these perceptions and the statistics.

In History, a greater number of A* candidates would have been awarded a B than an A if they had not resat any units. This suggests that resitting AS units is implicitly being rewarded by the A* criteria due to the nature of the relationship between AS and A2. In History one might expect maturation and further learning to make resitting AS units particularly successful as writing skills are honed and the student gains more appreciation of broader context, but a large element of this may simply be down to opportunity (as observed by QCA, 2003c). The majority of candidates sit both A2 units for the first time in the final June session and there is thus little opportunity to resit them without affecting future plans for employment or education. In turn this means that few candidates are able to move from an A to an A* by resitting, as this would necessitate resitting A2 units, and therefore most of the resitters come from a grade B. The contribution made to grades and resitting by sheer opportunity is potentially of concern as this varies across specifications, due to the patterns of entry for unit exams which are in turn driven by the numbers and weighting of units. Additionally, the imbalance of opportunity may be inequitable between different types of schools and colleges, depending on when students are entered for unit assessments for the first time.

In some subjects, candidates who were forecast an A* and went on to achieve it resat fewer units in the A level than those who did not, so resitting earlier in the A level (perhaps indicating unreliability of performance) may be a predictor for poorer or unreliable performance in the final session. As well as any inherent character traits this might reveal, resitting could also increase the overall examination burden in the final session and distract the candidate from their A2 units. This may justify use of information on resits at AS as additional information for higher education admissions.

Following the recent consultation on A level reform, it was announced (Ofqual, 2012) that no January exam sessions will be available from 2014 onwards (for the remainder of the life of the modular A levels). This will mean that students will have only one opportunity to resit AS units, and A2 units will typically be taken in the final June session. In practice the A2 units are largely already taken in the final session for History and English Literature, and in Art and Design only summer assessment is available at present. However, there will be an effect on patterns of entry and resitting in Chemistry. This study has shown that the highest achieving candidates will be less affected by this than other candidates, as they resit less, although the small number of candidates who do resit due to an anomalous performance may be disadvantaged. From 2015, a subsequent reform of A levels looks set to remove the AS in its current form, and move to a fully linear qualification, in which resitting will be much less practical. The patterns of resitting observed in this study by students achieving different grades suggest that the highest achieving students are overall less likely to be affected by the reform than less able students.

Conclusion

This study investigated resitting in high achieving A* candidates at A level compared to other candidates by looking at both the extent and effect of resitting. We have found evidence that resitting at A level is not as prevalent or as effective as popularly supposed. Overall, high achieving candidates were less likely to resit units than other candidates. However, the increase in marks after resitting was higher for A* candidates than for other candidates, suggesting that A* candidates might be more likely to resit due to an anomalous performance. Since more highly achieving candidates are less likely to resit units, information on a student's resits could be a good predictor for A level performance, and provide useful information for higher education admissions.

References

Al-Bayatti, M.F., & Jones, B. (2003). *Statistical study of the differences in candidates' results between first and second attempts in some GCE AS units*. Paper presented at the British Educational Research Association Annual Conference, September 11–13, in Edinburgh, UK. Available online at: http://www.leeds.ac.uk/educol/documents/00003197.htm (Accessed 28 November 2012).

CERP (2012). *What is the impact of resitting at A-level?* AQA Centre for Education Research and Policy, Manchester. Available online at: http://cerp.aqa.org.uk/sites/default/files/pdf_upload/CERP_IP_resitting_14072012.pdf (Accessed 28 November 2012).

Dearing, R. (1996). *Review of qualifications for 16–19 year olds*. London: SCAA.

de Waal, A. (2009). *Straight As? A-level teachers' views on today's A-levels*. London: Civitas. Available online at: http://www.civitas.org.uk/pdf/straight_a's.pdf (Accessed 18 January 2013).

Gill, T. (2009). *Uptake of GCE AS level subjects in England 2001–2006*. Statistics Report Series No.8. Cambridge: Cambridge Assessment.

Gill, T. (2010). *Patterns and impact of re-sits in unitised GCSE and A-level specifications*. Research Report. Cambridge: Cambridge Assessment.

Gill, T. & Suto, I. (2012). *Students' and teachers' views and experiences of A level module re-sits*. Paper presented at British Educational Research Association conference, Manchester, September 2012.

Gray, E. A. (2002). *The comparability between modular and non-modular examinations at GCE Advanced level (PhD thesis)*. Institute of Education, University of London. (Accessed from EThoS Persistent ID: uk.bl.ethos.251901).

Higton, J., Noble, J., Pope, S., Boal, N., Ginnis, S., Donaldson, R. & Greevy, H. (2012). *Fit for purpose? The view of the higher education sector, teachers and employers on the suitability of A levels*. Ofqual/12/5145. Available online at: http://www.ofqual.gov.uk/files/2012-04-03-fit-for-purpose-a-levels.pdf (Accessed 18 January 2013).

MacLeod, D. (2007, September 21). No limit on A-level resits, watchdog rules. *The Guardian*. Available online at: http://www.guardian.co.uk/education/2007/sep/21/schools.alevels (Accessed 25 January 2013).

Matthews, A., & Pepper, D. (2007). *Evaluation of participation in GCE mathematics*. QCA/07/3388. London: QCA. Available online at: http://www2.ofqual.gov.uk/downloads/category/106-gq-monitoring (Accessed 25 January 2013).

Ofqual (2010). *Open letter to secondary schools and colleges about the new A* grade at A level*. Available online at: http://www2.ofqual.gov.uk/files/2010-02-11-open-letter-a-star-grade.pdf (Accessed 18 January 2013).

Ofqual (2012). *Ofqual announces changes to A levels*. Press release, 9 November 2012. Available online at: http://www.ofqual.gov.uk/news/ofqual-announces-changes-to-a-levels/ (Accessed 18 January 2013).

Poon Scott, E. (2012). Short-term gain at long-term cost? How resit policy can affect student learning. *Assessment in Education: Principles, Policy & Practice*, **19**, 4, 431–449. doi:10.1080/0969594X.2012.714741

Qualifications and Curriculum Authority (QCA), (2003a, 27 January). *Review of A level awarding in 2002*. Available online at: http://web.archive.org/web/20030625040443/http://www.qca.org.uk/nq/framework/review_a_level_grading.asp (Accessed 24 January 2013).

Qualifications and Curriculum Authority (QCA), (2003b, 3 October). *Revision of A-level resit regulations*. Available online at: http://wayback.archive.org/web/20080915101555/http://www.qca.org.uk/qca_9696.aspx (Accessed 24 January 2013).

Qualifications and Curriculum Authority (QCA). (2003c, December). *Curriculum 2000 Review: Report on Phase 3*. Available online at: http://dera.ioe.ac.uk/id/eprint/10427 (Accessed 24 January 2013).

Qualifications and Curriculum Authority (QCA), (2007). *A-level resitting: summary of research findings*. Available online at: http://www2.ofqual.gov.uk/files/qca-07-3387-Resit-report.pdf (Accessed 18 January 2013).

Smith, G., & Smith, J. (2005). Regression to the mean in average test scores. *Educational Assessment*, **10**, 4, 377–399. doi:10.1207/s15326977ea1004_4

Tomlinson, M. (2002). *Inquiry into A level standards: final report*. London: Department for Education and Skills.

Wheadon, C. (2010). *The impact of re-sitting on the fairness of grading*. AQA Centre for Education Research and Policy, Manchester. Available online at: http://cerp.aqa.org.uk/research-library/impact-re-sitting-fairness-grading (Accessed 18 January 2013).

Williams, D. A. (2009). *What has been the impact of re-sitting AS-Level examinations in Economics and Business Studies on students at a boys' independent school in the West Midlands?* (PhD thesis). University of Warwick. Available online at: http://wrap.warwick.ac.uk/2803/ (Accessed 18 January 2013).