



Department
for Business
Innovation & Skills

BIS RESEARCH PAPER NUMBER 120

Investigating the accuracy of predicted A level grades as part of the 2010 UCAS admission process

November 2013

RESEARCH

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1. Executive summary

This report presents an analysis investigating the accuracy of A level grades predicted for applicants entering higher education in 2010. As was the case with last year's report (BIS 2011), this work analyses data on the accuracy of A level predictions by cross-referencing grade predictions by grade achievement, and then filtering by various demographic characteristics. This work has been re-cast using more recent data following a change in the grading structure of GCE A levels.

Key findings identified within this report are highlighted below:

- The introduction of a new attainable grade (A*) at A level for 2010 admissions has lowered the overall prediction accuracy by over 10 percentage points, falling from 52% in 2009 to 42% in 2010.
- Overall over-prediction (predictions at least one grade higher than result achieved) has risen to 48% (+6 percentage points) since 2009.
- Overall under-prediction remains very low, although percentages have risen from 7% in 2009 to 11% in 2010.
- Over half (55%) of all A* grade predictions were inaccurate.
- The largest decline in grade prediction accuracy was seen among A grade predictions, where accuracy rates fell from 64% in 2009 to 43% in 2010.
- In 2010, the highest **percentage** of accurate predictions was seen among E grade predictions, where 54% accuracy was observed; however, this percentage constituted only 785 cases within the sample used. The highest **number** of accurate predictions was seen among A grade predictions where 24,692 cases out of 58,044 (43%) were accurately predicted.

2. Introduction

This research aims to present findings and inform discussion on accuracy rates of predicted GCE A level grades. The focus of the current iteration of the investigation is grades predicted for applicants who were planning to enter HE in September 2010. The main aims of this report are:

1. to provide an overview of the status of GCE A level prediction accuracy within the UK 2010 admissions process
2. to observe the ways in which the introduction of the new A* grade at A level has impacted upon grade prediction accuracy

This work forms part of longitudinal research, which UCAS has undertaken on behalf of the UK Department for Business, Innovation and Skills (BIS). It updates DfES-commissioned analysis published by UCAS in 2005, which examined A level awards in 2004 (Hayward, 2005).

The first report in the series (*Investigating the accuracy of predicted A level grades as part of the 2009 UCAS admissions process*, BIS 2011), provided an overview detailing the varying levels of prediction accuracy across different groups within the UK. Its purpose was to identify whether or not specific applicant characteristics appeared to influence the accuracy of predicted grades, and it achieved this by cross-referencing nine different applicant characteristics¹ with figures being based upon grade-by-grade analysis of prediction accuracy. The findings clearly indicated that certain demographic factors looked likely to be having an effect on accuracy. This study has been completed to update the previous report so as to provide insight as to the impact that the new A* A level grade has had on grade prediction accuracy.

¹ Gender; social class; ethnicity; centre type; disability; age; region (within England); country (UK only); and number of choices made by the applicant.

- The 'Black African', 'Black Caribbean', and 'Black Other' groups all had high rates of over-prediction (56%, 56%, and 59% respectively), and low rates of prediction accuracy (35%, 35%, and 31% respectively).
- The lowest percentage of under-prediction was seen within the 'Asian Other' group (8%), although this group also had low prediction accuracy (36%), and high over-prediction rates (56%).
- The 'Asian Chinese' group received the highest percentages of both A* and A grade predictions and achievement. This group also had the highest A* grade prediction accuracy (56%) and the second highest A grade prediction accuracy (46%).
- The 'Mixed White and Asian' group had the highest prediction accuracy for A (47%), B (42%) and D (50%) grades.
- The 'White' applicant group had the highest percentage of B grade achievement.

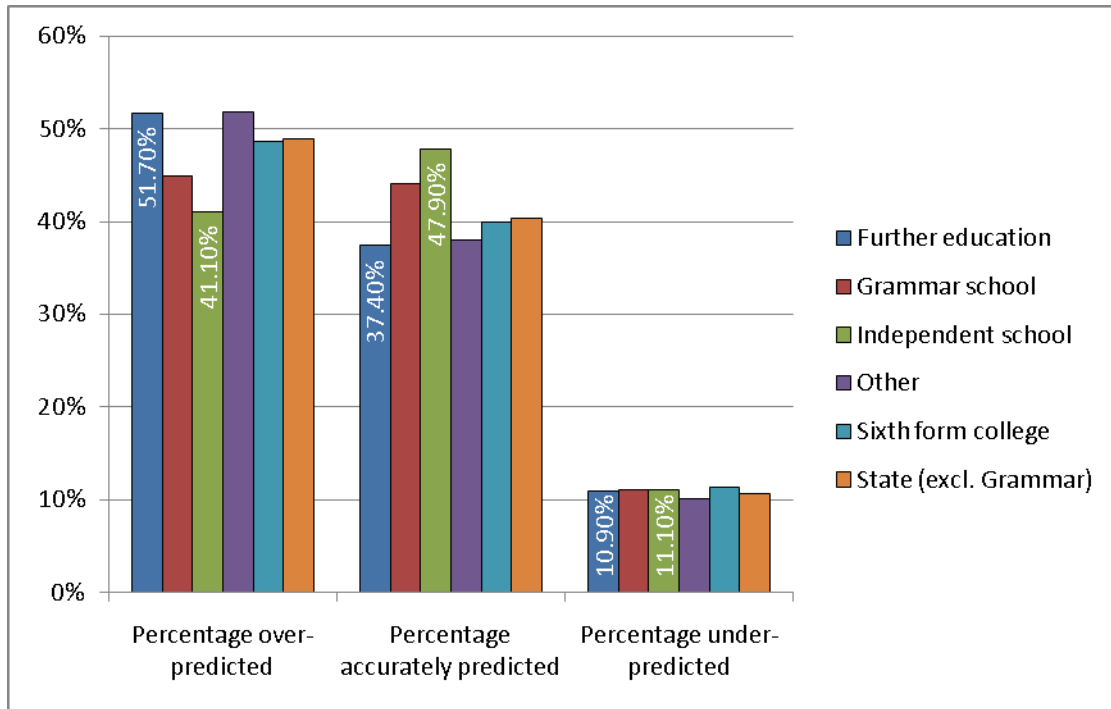
Centre-type attended

Table 12 - The extent of over- and under-prediction of A level grades based on centre-type of the applicant (UK-domiciled, 2010)

	Percentage over-predicted	Rank (lowest)	Percentage accurately predicted	Rank (highest)	Percentage under-predicted	Rank (lowest)	Total (number)
Further education	51.7%	5	37.4%	6	10.9%	3	10,474
Grammar school	44.9%	2	44.1%	2	11.0%	4	20,425
Independent school	41.1%	1	47.9%	1	11.1%	5	23,166
Other	51.9%	6	38.0%	5	10.1%	1	3,108
Sixth form college	48.7%	3	40.0%	4	11.4%	6	36,953
State (excl. Grammar)	48.9%	4	40.4%	3	10.7%	2	82,968

	E	0.0%	0.6%	2.8%	11.8%	30.3%	54.5%	n/a	7.0%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
	Sixth form college	A*	A	B	C	D	E		Total achieved
	Total predicted	5.2%	30.4%	32.1%	24.3%	6.8%	1.2%	100%	n/a
Achieved grades	A*	37.8%	11.4%	1.5%	0.2%	0.2%	0.0%	n/a	6.0%
	A	52.5%	39.5%	6.5%	0.9%	0.2%	0.2%	n/a	17.1%
	B	8.4%	37.2%	39.3%	11.9%	3.8%	1.6%	n/a	27.5%
	C	1.0%	9.5%	38.2%	40.1%	18.9%	9.9%	n/a	26.4%
	D	0.3%	1.8%	11.7%	35.0%	44.4%	37.3%	n/a	16.3%
	E	0.1%	0.5%	2.8%	11.8%	32.7%	50.9%	n/a	6.7%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
	State (excl. Grammar)	A*	A	B	C	D	E		Total achieved
	Total predicted	5.1%	28.7%	32.5%	25.6%	7.1%	1.0%	100%	n/a
Achieved grades	A*	41.3%	11.1%	1.4%	0.2%	0.0%	0.0%	n/a	5.8%
	A	51.0%	40.7%	6.6%	0.7%	0.1%	0.1%	n/a	16.6%
	B	7.0%	37.4%	39.2%	11.0%	2.6%	1.6%	n/a	26.8%
	C	0.5%	9.2%	38.6%	39.6%	18.1%	8.2%	n/a	26.7%
	D	0.2%	1.4%	11.9%	35.9%	45.1%	34.2%	n/a	17.0%
	E	0.0%	0.3%	2.3%	12.7%	34.1%	55.9%	n/a	7.0%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%

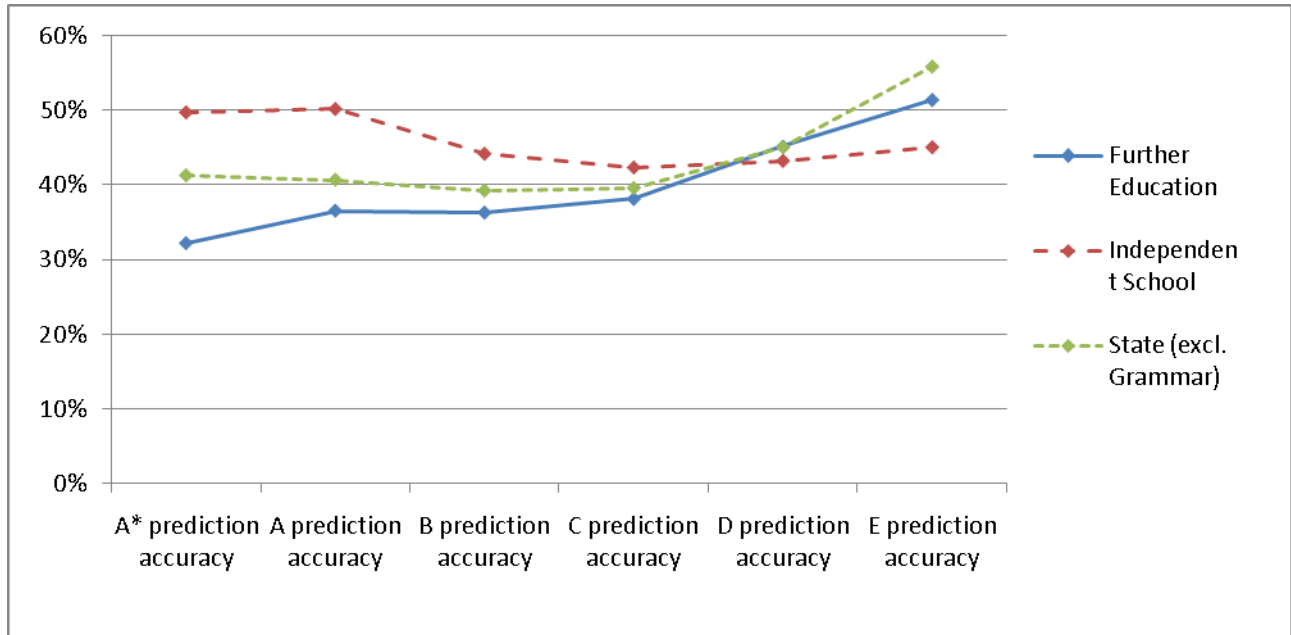
Figure 5 - Illustration of the extent of over-/under-prediction of A level grades based on centre-type (UK-domiciled, 2010)



As can be seen in Figure 5, variation in under-prediction is slight across all centre-types. The biggest contrast in prediction accuracy can be seen by comparing Further education colleges with Independent schools, with the former centre-type seeing the lowest prediction accuracy and highest over-prediction and the latter being amongst the highest prediction accuracy and lowest over-prediction.

Figure 6 provides a visual comparison between these two centre-types (it also includes 'State (excl. Grammar)' institutions for reference as this was the largest group) where it can be seen that, for the 'Further education' group, prediction accuracy rises steadily as grades decrease. The same cannot be said for the 'Independent' group.

Figure 6 – Comparison of grade prediction accuracies for the ‘Further education’, ‘Independent’, and ‘State (excl. Grammar)’ centre-types (UK-domiciled, 2010)



Headline findings (centre-type)

- ‘Independent’ centre-types had the lowest percentage of over-prediction (41.1%) and the highest percentage of accurate predictions (47.9%).
- There was little difference between centre-types in terms of under-predicted grades (a range of only 1.3 percentage points). The lowest was seen in the ‘Other’ group at 10.0%, and the highest was seen within the ‘Sixth form college’ group with a percentage of 11.4%.
- The ‘Further education’ group had the lowest percentage of prediction accuracy (37.4%), and the second highest rate of over-prediction (51.7%).
- The ‘Independent’ group received the highest percentages of both A* (19.7% - which was 16.3 percentage points higher than the ‘Further education’ group) and A (45.5%) grade predictions. This group also saw the highest achievement rates for A* and A grades.
- The ‘Independent’ group had the highest A* (49.7%), A (50.2%), B (44.2%), and C (42.4%) grade prediction accuracy.

- The 'Further education' group had the lowest A* (32.2%), A (36.3%), B (36.3%), and C (38.1%) grade prediction accuracy.
- The 'Grammar school' applicant group had the highest percentage of B grade achievement.
- The highest percentage of inaccurate-by-one-grade A* predictions was seen among the 'Further education' group (58.1%)
- The 'Grammar school' group had the highest percentage of A grade predictions that resulted in A* achievement (13.3%). The group with the lowest percentage of one grade under-prediction of A* achievement was 'Other', but it should be noted that this percentage was only marginally lower (at 9.4%).

Disability

Table 14 - The extent of over- and under-prediction of A level grades based on disability of the applicant (UK-domiciled, 2010)

	Percentage over-predicted	Rank (lowest)	Percentage accurately predicted	Rank (highest)	Percentage under-predicted	Rank (lowest)	Total (number)
Autistic disorder	41.4%	2	40.9%	8	17.8%	10	411
Blind/partial sight	41.5%	3	44.4%	2	14.1%	8	135
Deaf/partial hearing	43.1%	4	45.9%	1	11.0%	3	218
Learning difficulty	45.1%	5	43.3%	3	11.6%	5	5,134
Long standing illness	49.1%	9	39.7%	10	11.2%	4	1,050
Mental health	51.0%	10	41.4%	6	7.6%	1	461
Multiple disabilities	45.5%	6	41.3%	7	13.2%	7	213
No disability	47.7%	8	41.5%	5	10.9%	2	168,095
Other disability	46.7%	7	40.3%	9	13.0%	6	1,113
Wheelchair/mobility	40.5%	1	43.2%	4	16.3%	9	264

Table 15 - Accuracy of predicted grades; percentage of predicted grades by achieved grades and by disability (UK-domiciled, 2010)

		Predicted grades							
		A*	A	B	C	D	E		Total achieved
Autistic disorder									
Total predicted		9.2%	23.6%	26.0%	27.5%	10.7%	2.9%	100%	n/a
Achieved grades	A*	50.0%	22.7%	1.9%	0.0%	0.0%	0.0%	n/a	10.5%
	A	42.1%	47.4%	8.4%	1.8%	0.0%	0.0%	n/a	17.8%
	B	7.9%	22.7%	41.1%	17.7%	2.3%	0.0%	n/a	21.9%
	C	0.0%	6.2%	38.3%	30.1%	18.2%	16.7%	n/a	22.1%
	D	0.0%	1.0%	9.3%	37.2%	50.0%	58.3%	n/a	20.0%
	E	0.0%	0.0%	0.9%	13.3%	29.5%	25.0%	n/a	7.8%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
Blind/partial sight									Total achieved
Total predicted		8.1%	26.7%	31.9%	20.7%	9.6%	3.0%	100%	n/a
Achieved grades	A*	45.5%	11.1%	2.3%	0.0%	0.0%	0.0%	n/a	7.4%
	A	45.5%	36.1%	2.3%	0.0%	0.0%	0.0%	n/a	14.1%
	B	9.1%	47.2%	51.2%	10.7%	0.0%	0.0%	n/a	31.9%
	C	0.0%	2.8%	30.2%	53.6%	53.8%	0.0%	n/a	26.7%
	D	0.0%	2.8%	11.6%	17.9%	30.8%	75.0%	n/a	13.3%
	E	0.0%	0.0%	2.3%	17.9%	15.4%	25.0%	n/a	6.7%
Total	100%	100%	100%	100%	100%	100%	n/a	100%	
Deaf/partial hearing									Total achieved
Total predicted		2.3%	28.4%	33.9%	27.1%	6.9%	1.4%	100%	n/a
Achieved grades	A*	60.0%	11.3%	2.7%	0.0%	0.0%	0.0%	n/a	5.5%
	A	20.0%	48.4%	5.4%	0.0%	0.0%	0.0%	n/a	16.1%
	B	20.0%	25.8%	39.2%	11.9%	0.0%	0.0%	n/a	24.3%
	C	0.0%	14.5%	36.5%	44.1%	13.3%	0.0%	n/a	29.4%
	D	0.0%	0.0%	14.9%	28.8%	73.3%	66.7%	n/a	18.8%
	E	0.0%	0.0%	1.4%	15.3%	13.3%	33.3%	n/a	6.0%
Total	100%	100%	100%	100%	100%	100%	n/a	100%	
Learning difficulty									Total achieved
Total predicted		6.7%	29.9%	31.0%	23.9%	7.3%	1.1%	100%	n/a
Achieved grades	A*	49.7%	11.6%	1.6%	0.2%	0.0%	0.0%	n/a	7.3%
	A	48.0%	45.3%	7.7%	1.6%	0.0%	0.0%	n/a	19.6%
	B	2.3%	35.3%	40.5%	10.7%	4.5%	0.0%	n/a	26.2%
	C	0.0%	6.7%	36.0%	41.6%	19.6%	12.1%	n/a	24.7%
	D	0.0%	0.8%	11.7%	34.4%	44.6%	32.8%	n/a	15.7%
	E	0.0%	0.2%	2.5%	11.4%	31.3%	55.2%	n/a	6.5%

	Total	100%	100%	100%	100%	100%	100%	n/a	100%
	Long standing illness	A*	A	B	C	D	E		Total achieved
	Total predicted	7.4%	30.8%	32.0%	23.2%	5.9%	0.7%	100%	n/a
Achieved grades	A*	43.6%	13.9%	2.7%	0.0%	0.0%	0.0%	n/a	8.4%
	A	52.6%	42.1%	6.5%	0.0%	0.0%	0.0%	n/a	19.0%
	B	3.8%	35.0%	39.3%	9.8%	3.2%	0.0%	n/a	26.1%
	C	0.0%	6.5%	36.9%	36.9%	19.4%	0.0%	n/a	23.5%
	D	0.0%	2.2%	12.8%	37.7%	35.5%	57.1%	n/a	16.0%
	E	0.0%	0.3%	1.8%	15.6%	41.9%	42.9%	n/a	7.0%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
	Mental health	A*	A	B	C	D	E		Total achieved
	Total predicted	7.6%	37.7%	30.2%	19.5%	5.0%	0.0%	100%	n/a
Achieved grades	A*	48.6%	9.2%	2.2%	1.1%	0.0%	0.0%	n/a	8.0%
	A	40.0%	42.0%	2.9%	1.1%	0.0%	0.0%	n/a	20.0%
	B	11.4%	35.6%	36.7%	7.8%	0.0%	0.0%	n/a	26.9%
	C	0.0%	10.3%	41.7%	44.4%	13.0%	0.0%	n/a	25.8%
	D	0.0%	1.1%	14.4%	41.1%	43.5%	0.0%	n/a	15.0%
	E	0.0%	1.7%	2.2%	4.4%	43.5%	0.0%	n/a	4.3%
	Total	100%	100%	100%	100%	100%	0.0%	n/a	100%
	Multiple disabilities	A*	A	B	C	D	E		Total achieved
	Total predicted	7.5%	35.7%	31.9%	19.7%	3.8%	1.4%	100%	n/a
Achieved grades	A*	31.3%	14.5%	1.5%	0.0%	0.0%	0.0%	n/a	8.0%
	A	62.5%	42.1%	7.4%	0.0%	0.0%	0.0%	n/a	22.1%
	B	6.3%	31.6%	44.1%	14.3%	0.0%	0.0%	n/a	28.6%
	C	0.0%	7.9%	33.8%	40.5%	25.0%	33.3%	n/a	23.0%
	D	0.0%	3.9%	10.3%	31.0%	50.0%	66.7%	n/a	13.6%
	E	0.0%	0.0%	2.9%	14.3%	25.0%	0.0%	n/a	4.7%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
	No disability	A*	A	B	C	D	E		Total achieved
	Total predicted	8.0%	32.9%	31.0%	21.6%	5.7%	0.8%	100%	n/a
Achieved grades	A*	44.5%	11.8%	1.4%	0.2%	0.1%	0.0%	n/a	7.9%
	A	49.4%	42.5%	7.2%	0.9%	0.2%	0.2%	n/a	20.4%
	B	5.4%	35.7%	39.9%	11.6%	3.1%	1.7%	n/a	27.2%
	C	0.6%	8.4%	37.7%	39.7%	18.6%	8.7%	n/a	24.2%
	D	0.1%	1.4%	11.5%	35.4%	44.9%	35.5%	n/a	14.5%
	E	0.0%	0.3%	2.4%	12.3%	33.2%	53.9%	n/a	5.8%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%

		Other disability	A*	A	B	C	D	E		Total achieved
		Total predicted	7.7%	34.1%	29.2%	21.6%	6.5%	0.9%	100%	n/a
Achieved grades	A*	44.2%	16.1%	1.8%	0.4%	0.0%	0.0%	n/a	9.5%	
	A	47.7%	41.6%	7.1%	0.8%	0.0%	0.0%	n/a	20.1%	
	B	7.0%	32.1%	39.1%	13.8%	2.8%	0.0%	n/a	26.1%	
	C	0.0%	8.4%	37.2%	38.3%	19.4%	10.0%	n/a	23.4%	
	D	0.0%	1.6%	12.0%	35.4%	36.1%	20.0%	n/a	14.2%	
	E	1.2%	0.3%	2.8%	11.3%	41.7%	70.0%	n/a	6.7%	
	Total	100%	100%	100%	100%	100%	100%	n/a	100%	
		Wheelchair/mobility	A*	A	B	C	D	E		Total achieved
		Total predicted	8.7%	26.5%	29.2%	27.3%	6.1%	2.3%	100%	n/a
Achieved grades	A*	30.4%	18.6%	1.3%	1.4%	0.0%	0.0%	n/a	8.3%	
	A	47.8%	41.4%	13.0%	1.4%	0.0%	0.0%	n/a	19.3%	
	B	17.4%	32.9%	45.5%	15.3%	0.0%	0.0%	n/a	27.7%	
	C	0.0%	5.7%	27.3%	41.7%	25.0%	0.0%	n/a	22.3%	
	D	0.0%	1.4%	10.4%	27.8%	56.3%	33.3%	n/a	15.2%	
	E	4.3%	0.0%	2.6%	12.5%	18.8%	66.7%	n/a	7.2%	
	Total	100%	100%	100%	100%	100%	100%	n/a	100%	

Unlike many of the other variables, there did not appear to be any clear patterns in overall accuracy, over- or under-prediction percentages for disability. Perhaps the most remarkable observation from Table 14 was that under-prediction for the 'Autistic disorder' group was over 10% higher than that of the 'Mental health' group. However, however, due to the very low proportion of applicants who declared a disability when applying to university, any findings from this analysis should be treated with caution as there is a chance that some of the figures are unreliable.

Headline findings (disability)

- The 'Autistic disorder' group had the highest percentage of A* (9.2%), C (27.5%), and D (10.7%) grade predictions, and the highest percentage of A* (10.5%), D (20.0%), and E (7.8%) grade achievement. This group also had the highest percentage of A grade predictions that resulted in A* grade achievement (22.7%).
- The 'Blind/partial sight' group had the highest percentage of E (3.0%) grade predictions, the highest percentage of B (31.9%) grade achievement, and the highest percentages of B (51.2%) and C (53.6%) grade prediction accuracy.

- The 'Deaf/partial hearing' group had the highest percentage of B (33.9%) grade predictions, the highest percentage of C (29.4%) grade achievement, and the highest percentages of A* (60%), A (48.4%), and D (73.3%) grade prediction accuracy.
- The 'Mental health' group had the highest percentage of A grade predictions (37.7%), and the lowest percentage of A grade predictions that resulted in A* grade achievement (9.2%).
- The 'Multiple disabilities' group had the highest percentage of A grade achievement (22.1%).
- The 'Other disability' group had the highest percentage of E grade prediction accuracy (70.0%).

Age

Previous research into this area, DfES (2005), and BIS (2011), have used the standard UCAS age groups, namely: under 18, 18, 19, 20, 21-24, 25-29, 30-39, and 40+. However, following analysis of findings presented within these two reports, it was decided that, because of the known general make-up of UK-domiciled A level candidates, for the purpose of further analysis within this research, different age groups would be used. The first four age-groups remain, however, due to the very small numbers of mature applicants, this group has been widened and now encompasses all applicants aged 21 or over. It should be noted that 18- and 19-year-olds make-up 97.7% of the sample, and this is representative of all A level applicants.

Table 16 - The extent of over- and under-prediction of A level grades based on age of the applicant (UK-domiciled, 2010)

	Percentage over-predicted	Rank (lowest)	Percentage accurately predicted	Rank (highest)	Percentage under-predicted	Rank (lowest)	Total (number)
Under 18	35.6%	1	50.9%	1	13.6%	5	472
18	46.4%	2	42.4%	2	11.2%	4	143,832
19	52.0%	3	38.2%	3	9.9%	3	29,108
20	58.2%	4	34.1%	4	7.7%	1	2,746
21+	59.8%	5	31.4%	5	8.8%	2	936

Table 17 - Accuracy of predicted grades; percentage of predicted grades by achieved grades and by age (UK-domiciled, 2010)

		Predicted grades							
		A*	A	B	C	D	E		Total achieved
Under 18									
Total predicted		24.2%	47.0%	20.8%	7.2%	0.6%	0.2%	100%	n/a
Achieved grades	A*	60.5%	18.9%	1.0%	0.0%	0.0%	0.0%	n/a	23.7%
	A	36.0%	51.4%	10.2%	8.8%	0.0%	0.0%	n/a	35.6%
	B	3.5%	23.4%	39.8%	20.6%	0.0%	100%	n/a	21.8%
	C	0.0%	3.6%	33.7%	44.1%	0.0%	0.0%	n/a	11.9%
	D	0.0%	2.7%	12.2%	23.5%	100%	0.0%	n/a	6.1%
	E	0.0%	0.0%	3.1%	2.9%	0.0%	0.0%	n/a	0.8%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
18 years									Total achieved
Total predicted		8.6%	33.3%	30.6%	21.2%	5.6%	0.8%	100%	n/a
Achieved grades	A*	45.1%	12.3%	1.5%	0.2%	0.1%	0.0%	n/a	8.5%
	A	49.2%	43.4%	7.5%	0.9%	0.2%	0.2%	n/a	21.2%
	B	5.0%	35.0%	40.9%	11.9%	3.1%	1.5%	n/a	27.3%
	C	0.5%	7.9%	37.1%	40.6%	19.2%	9.4%	n/a	23.7%
	D	0.1%	1.2%	10.9%	34.8%	45.3%	35.5%	n/a	13.9%
	E	0.0%	0.3%	2.1%	11.7%	32.2%	53.4%	n/a	5.4%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
19 years									Total achieved
Total predicted		5.3%	30.3%	32.6%	24.1%	6.6%	1.0%	100%	n/a
Achieved grades	A*	40.5%	9.7%	1.1%	0.2%	0.1%	0.0%	n/a	5.5%
	A	50.9%	38.8%	5.8%	1.1%	0.2%	0.3%	n/a	16.6%
	B	7.7%	38.9%	36.5%	10.4%	3.0%	1.3%	n/a	26.8%
	C	0.6%	10.0%	40.0%	37.2%	17.3%	6.4%	n/a	26.3%
	D	0.1%	2.1%	13.5%	36.9%	42.9%	38.8%	n/a	17.2%
	E	0.2%	0.4%	3.2%	14.2%	36.7%	53.2%	n/a	7.6%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
20 years									Total achieved
Total predicted		2.4%	28.5%	33.2%	27.5%	7.2%	1.1%	100%	n/a
Achieved grades	A*	37.9%	4.0%	1.0%	0.4%	0.0%	0.0%	n/a	2.5%
	A	48.5%	33.2%	4.7%	0.9%	0.0%	0.0%	n/a	12.5%
	B	9.1%	42.1%	31.4%	9.5%	4.0%	3.2%	n/a	25.6%

	C	3.0%	15.6%	40.5%	34.4%	12.1%	12.9%	n/a	28.5%
	D	1.5%	3.3%	18.3%	40.8%	44.4%	29.0%	n/a	21.8%
	E	0.0%	1.8%	4.1%	13.9%	39.4%	54.8%	n/a	9.1%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%
	21+ years	A*	A	B	C	D	E		Total achieved
	Total predicted	5.3%	40.6%	31.5%	17.5%	4.3%	0.7%	100%	n/a
Achieved grades	A*	16.0%	7.6%	1.0%	0.6%	0.0%	0.0%	n/a	4.4%
	A	60.0%	35.0%	8.5%	0.6%	0.0%	0.0%	n/a	20.2%
	B	14.0%	35.8%	29.2%	10.4%	0.0%	0.0%	n/a	26.3%
	C	8.0%	14.2%	33.9%	25.0%	15.0%	0.0%	n/a	21.9%
	D	2.0%	3.9%	21.0%	45.7%	47.5%	0.0%	n/a	18.4%
	E	0.0%	3.4%	6.4%	17.7%	37.5%	100%	n/a	8.9%
	Total	100%	100%	100%	100%	100%	100%	n/a	100%

Figure 7 - Comparison of grade prediction accuracies for the '18', '19', '20' and '21+' age groups (UK-domiciled, 2010)

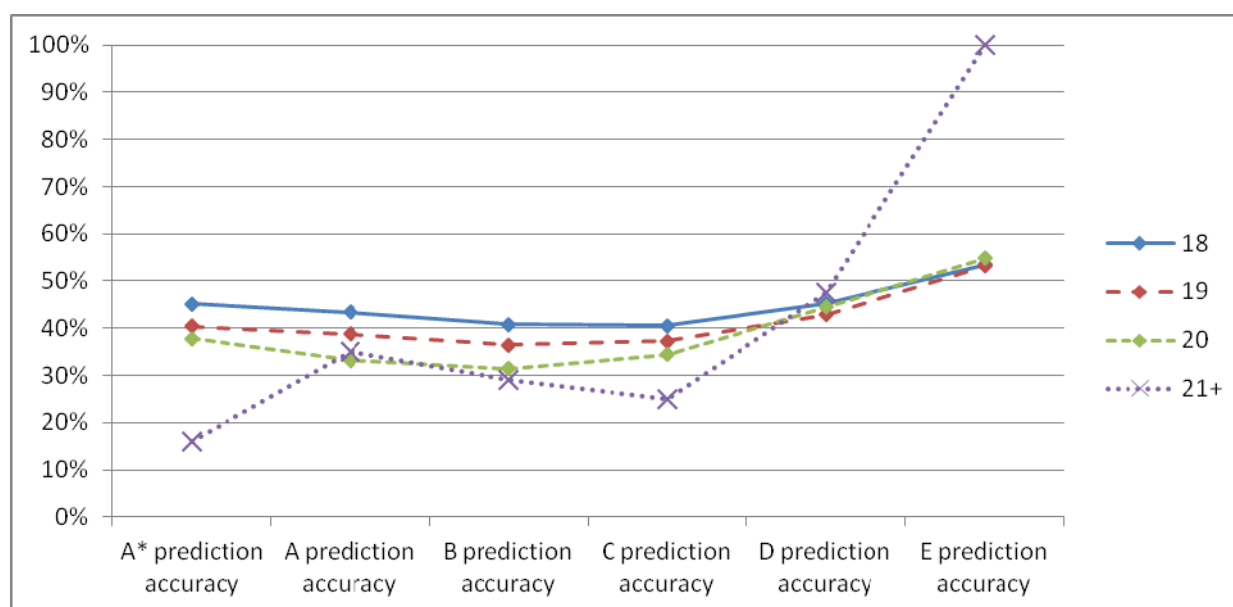


Figure 7 highlights similar patterns of accuracy for 18-, 19-, and 20-year-olds, with accuracy percentages falling as age increases. Prediction accuracy for mature applicants (i.e. 21 or older) follows a very different pattern, with very low A* grade prediction accuracy and 100% E grade prediction accuracy. The low numbers of predictions for applicants aged 21 and over seen in the sample are likely to have contributed to seeing such diversity of prediction accuracy; however, these figures clearly indicate age to have an apparent influence on prediction accuracy.

Headline findings (age)

- The percentage of accurate predictions decreased with age as over prediction increased. Under-prediction followed a similar pattern, percentages decreasing with age, however the rankings were inverted for the '20' and '21+' groups
- 'Under 18' age group had the lowest percentage of over-prediction (35.6% - over 10 percentage points lower than the nearest group), the highest percentage of accurate predictions (50.9%), and the highest percentage of under-prediction (13.6%).
- The '20' age group had the lowest percentage of under-prediction (7.7%); this group held the fourth highest percentage of over-prediction (58.2%), and the fourth lowest prediction accuracy (34.1%).
- The '21+' group had the highest percentage of over-prediction (59.8%), and the lowest rate of grade prediction accuracy (31.4%).
- The 'Under 18' group received the highest percentages of both A* (24.2% - which was 21.8 percentage points higher than the '20' group) and A (47%) grade predictions. This group also saw the highest achievement rates for A* (23.7%) and A (35.6%) grades.
- The '20' group received the highest percentages of B (33.2%), C (27.5%), D (7.2%), and E (1.1%) grade predictions. This group also saw the highest achievement rates for C (28.5%), D (21.8%), and E (9.1%) grades.
- The 'Under 18' group had the highest A* (60.5%), A (51.4%), C (44.1%), and D (100%) grade prediction accuracy, although it should be noted that numbers within the predicted D grade category for this group totalled only three within the sample.
- The '21+' group had the lowest A* (16.0%), B (29.2%), and C (25.0%) grade prediction accuracy. This group also had the highest E grade prediction accuracy, and the second highest D grade prediction accuracy (behind the 'Under 18' group which contained only three D grade predictions).
- The '18' applicant group had the highest percentage of B grade achievement (27.3%) as well as the highest B grade prediction accuracy (40.9%).

- The highest percentage of inaccurate-by-one-grade A* predictions was seen among the '21+' group (60.0%).
- The 'Under 18' group had the highest percentage of A grade predictions that resulted in A* achievement (18.9%).
- The '18' group had the second highest percentage of A grade predictions that resulted in A* achievement (12.3%).
- The '20' group had the lowest percentage of A grade prediction that resulted in A* achievement (4.0%).

6. Conclusion

This report updates the findings detailed within the 2009 Predicted Grades Report (BIS, 2011) in relation to the changing profile of prediction accuracy for the 2010 admission cycle. In so doing, they serve to highlight the fact that overall grade prediction accuracy has fallen by over 10% since 2009. However, this development is of limited significance given that, both mathematically and empirically, it was the predictable outcome of the introduction of the A* GCE A level grade. As teachers become more experienced at determining the likely achievement of their students within this new grade, it is to be expected that overall grade prediction will rise again. Nevertheless, given that the system now allows for six, rather than five, grades, it is unlikely that accuracy will quickly return to the rates seen in 2009.

It must be borne in mind that the focus of this research was to consider the potential effects of various demographic factors in relation to prediction accuracy, rather than A level grade attainment. The tables presented above (section 5), convincingly reveal a number of clear-cut, sometimes considerable, distinctions of attainment among various demographic groups. However, it was not within the remit of this research to provide analysis of these observations, but to identify possible characteristics inherently affecting grade prediction accuracy. For example, if, having been predicted an A grade, an applicant from a high social class group attains an A grade, and if A grades are the most consistently accurately predicted grade, it will always seem as though the driving factor behind that applicant's grade prediction accuracy is social class, whereas, in reality, a far more powerful effect is likely to be that the student obtained an A grade. In this instance social class is likely to have had a key influence on that applicant attaining an A grade, but this is not necessarily the underlying reason for his/her having been given an accurate grade prediction, and it is, therefore, important to treat any of the findings within this report with caution as apparent influencing factors may not be as clear-cut as the numbers sometimes suggest.

Further research within this field of study is, therefore, recommended taking into consideration a wider selection of variables, and a more comprehensive analysis which would allow significance testing of these variables so as to uncover the predominant influences varying prediction accuracy.

7. Bibliography

Everett, N. and Papageorgiou, J., 2011. *Investigating the accuracy of predicted A level grades as part of the 2009 UCAS admission process*, London: BIS

Hayward, G., 2005. *Estimating the Reliability of Predicted grades*, London: DfES

Reay, D., 2006. The Zombie Stalking English Schools: Social Class and Educational Inequality, *British Journal of Educational Studies*, vol 54, no 3, pp.288-307.

Taylor, M., 2006. It's official: class matters. *The Guardian*, 28 February

Webber, R and Butler, T., 2005. *Classifying pupils by where they live: how well does this predict variations in their GCSE results?* Centre for Advanced Spatial Analysis (UCL), UCL (University College London), Centre for Advanced Spatial Analysis (UCL), London, UK.

Appendix 1 - The sample compared to all A level applicants (2010) and total UCAS applicant cohort (2010)

The "sample" of applicants represents 30% of A levels taken by UK-domiciled applicants within the 2010 HE admission cycle.

The "applicant population", or "total applicant cohort" represents every UK-domiciled individual who applied through UCAS within the 2010 HE admission cycle.

The "A level applicant population" represents any individual (UK-domiciled), who applied through UCAS within the 2010 HE admission cycle, listing at least one A level within their application.

Table 1: Representation of gender within the sample compared to the A level applicant population and the total applicant cohort (2010)

Gender	Sample	%	Applicant population	%	A level applicant population	%
Female	73,085	55.0%	334,041	56.9%	158,383	55.2%
Male	59,739	45.0%	252,780	43.1%	128,486	44.8%
Total	132,824	100.0%	586,821	100.0%	286,869	100.0%

Table 2: Representation of ethnic groups within the sample compared to the A level applicant population and the total applicant cohort (2010)

Ethnicity	Sample	%	Applicant population	%	A level applicant population	%
Asian Bangladeshi	1,498	1.1%	5,823	1.0%	3,145	1.1%
Asian Chinese	1,350	1.0%	4,501	0.7%	2,780	1.0%
Asian Indian	6,173	4.7%	19,065	3.3%	12,207	4.3%

Asian Other	2,142	1.6%	9,858	1.7%	4,544	1.6%
Asian Pakistani	3,855	2.9%	16,831	2.9%	8,149	2.8%
Black African	3,517	2.7%	32,960	5.6%	7,416	2.6%
Black Caribbean	1,297	1.0%	10,286	1.8%	2,828	1.0%
Black Other	230	0.2%	2,032	0.4%	492	0.2%
Mixed Other	1,247	0.9%	5,784	1.0%	2,686	0.9%
Mixed White and Asian	1,688	1.3%	5,920	1.0%	3,561	1.2%
Mixed White and Black African	392	0.3%	2,343	0.4%	906	0.3%
Mixed White and Black Caribbean	1,088	0.8%	5,811	1.0%	2,443	0.9%
Other	1,277	1.0%	6,461	1.1%	2,708	0.9%
Unknown	919	0.7%	8,167	1.4%	2,047	0.7%
White	106,151	79.9%	450,979	76.9%	230,957	80.5%
Total	132,824	100.0%	586,821	100.0%	286,869	100.0%

Table 3: Representation of centre-type within the sample compared to the A level applicant population and the total applicant cohort (2010)

Centre-type	Sample	%	Applicant population	%	A level applicant population	%
Further education	8,088	6.1%	114,293	19.5%	20,961	7.3%
Grammar school	14,844	11.2%	34,086	5.8%	31,067	10.8%
Independent school	17,313	13.0%	43,432	7.4%	35,484	12.4%
Other	2,410	1.8%	124,283	21.2%	15,786	5.5%
Sixth form college	27,539	20.7%	96,931	16.5%	57,158	19.9%
State excl. Grammar	62,630	47.2%	173,796	29.6%	126,413	44.1%
Total	132,824	100.0%	586,821	100.0%	286,869	100.0%

Table 4: Representation of age bands within the sample compared to the A level applicant population and the total applicant cohort (2010)

Age band	Sample	%	Applicant population	%	A level applicant population	%
Under 18	342	0.3%	9,602	1.6%	624	0.2%
18	106,941	80.5%	243,270	41.5%	191,029	66.6%
19	22,587	17.0%	120,377	20.5%	79,953	27.9%
20	2,202	1.7%	48,247	8.2%	11,881	4.1%
21+	752	0.6%	165,325	28.2%	3,382	1.2%
Total	132,824	100.0%	586,821	100.0%	286,869	100.0%

Table 5: Representation of region within the sample compared to the A level applicant population and the total applicant cohort (2010)

Region	Sample	%	Applicant population	%	A level applicant population	%
East Midlands	10,301	7.8%	38,123	6.5%	21,044	7.3%
Eastern	13,682	10.3%	50,007	8.5%	28,345	9.9%
Greater London	20,806	15.7%	96,693	16.5%	44,528	15.5%
North East	5,047	3.8%	21,658	3.7%	10,639	3.7%
North West	16,980	12.8%	68,965	11.8%	34,348	12.0%
Northern Ireland	2,939	2.2%	19,682	3.4%	13,214	4.6%
Other UK	0	0.0%	22	0.0%	1	0.0%
Scotland	335	0.3%	46,347	7.9%	1,001	0.4%
South East	21,867	16.5%	78,255	13.3%	46,664	16.3%
South West	11,207	8.4%	46,142	7.9%	25,215	8.8%
Wales	5,790	4.4%	24,908	4.2%	13,504	4.7%
West Midlands	12,518	9.4%	51,171	8.7%	25,437	8.9%
Yorks & The Humber	11,352	8.6%	44,848	7.6%	22,929	8.0%
Total	132,824	100.0%	586,821	100.0%	286,869	100.0%

Table 6: Representation of the number of choices made within the sample compared to the A level applicant population and the total applicant cohort (2010)

Number of choices	Sample	%	Applicant population	%	A level applicant population	%
0 choices	43	0.0%	26,071	4.4%	209	0.1%
1 choice	1,906	1.4%	70,399	12.0%	8,615	3.0%
2 choices	1,737	1.3%	28,056	4.8%	5,676	2.0%
3 choices	3,746	2.8%	34,279	5.8%	10,520	3.7%
4 choices	10,187	7.7%	55,877	9.5%	24,213	8.4%
5 choices	115,205	86.7%	372,139	63.4%	237,636	82.8%
Total	132,824	100.0%	586,821	100.0%	286,869	100.0%

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