

Analysis - BCAT Cut Score

Following the completion of the BCAT Impact and Performance Evaluation in 2015, the Bar Standards Board was asked to consider the findings and the implications they had for the future implementation of the BCAT. As identified in the evaluation, the BCAT had not had any significant impact in achieving its key objective in raising standards on the BPTC. However, scores on the BCAT (rather than a passing or failing grade) were strongly correlated with outcomes on the BPTC. The Performance Evaluation highlighted that the current 'cut score' was set at such a level that only 0.65% of those who had taken the test were unable to pass after one or more attempts, and thus the current pass mark was set at too low a level to effectively screen out less able candidates from the BPTC. Instead, the evaluation recommended raising the 'cut score' to 46, which would enable the BCAT to filter out poorer candidates. With the data then available on 2014 BPTC grades, this pass mark would have excluded an additional 135 students from the BPTC, and in 2014 would have reduced the numbers of students failing to pass the BPTC by 20.7% (81 students).

The BSB identified two areas of concern in adopting a pass mark of 46. First, there was concern (identified in the evaluation report) that a pass mark of 46 might have an adverse impact on students from BME backgrounds, who performed worse (on average) on the BCAT. Second, that a pass mark of 46 excluded too high a proportion of students who would have gone on to pass the BPTC (40% of those who would have been excluded at a pass mark of 46 went on to pass the course in 2014, with 29.6% passing at Very Competent or Outstanding). In response to these concerns, additional analysis was undertaken to:

- investigate the impact of additional pass marks not evaluated as part of the performance evaluation;
- investigate any adverse impact on BME candidates using the two additional years' worth of BCAT results which were available.

Analysis – Cut Score

The independent analysis of different cut scores undertaken by Work Psychology Group as part of the BCAT Performance Evaluation focussed on recommending a BCAT mark associated with an outcome of 'Very Competent'. 'Very Competent' and 'Outstanding' can be viewed as the optimal desired grades on the BPTC (given that a relatively small proportion of passing students obtain a grade of 'Competent' on the BPTC, with 'Very Competent' making up the majority of passing grades). Nonetheless, it was felt that by aiming for a desired mark of 'Very Competent' or above, the cut score recommended by WPG ran the risk of excluding too many students who would have passed the course. As a result, the BSB decided to investigate lower cut scores in order to determine their impact on passing rates, and whether they would have a more proportionate impact on excluding passing students.

The table below provides summary statistics for the BCAT score obtained by students in the 2013/14 cohort (at the time the decision was made to investigate alternative cut scores, the data for the 2014/15 cohort was not available), for each of the BPTC grades obtained. The 'mean' value provided indicates the average score on the BCAT for candidates achieving each of the given grades on the BPTC. A 'percentile' indicates the value below which a given percentage of a group of observations fall. So, the 10th percentile indicates that of those

candidates who achieved a grade of 'Competent' on the BPTC, only 10% scored less than 45 on the BCAT.

BPTC Overall Final Grade	BCAT Mark - 10th Percentile	BCAT Score - Mean
Outstanding	53	58.7
Very Competent	46	54.2
Competent	45	51.1
Not Yet Competent	42	49.1

These figures suggested that a BCAT mark of 45 could be a more appropriate cut score if the intention is to set the mark at a point associated with a BPTC grade of 'Competent' or above, while only excluding a small number of students who could have passed the BPTC. While the 10th percentile for a grade of 'Very Competent' is 46 (mirroring the recommendation by WPG of pass mark of 46 in order to target BPTC grades of 'Very Competent'), the corresponding figure for a pass mark of 'Competent' is 45. As a result, analysis of a pass mark of '45' was undertaken, mirroring the analysis of '46' undertaken by WPG as part of the Performance Evaluation. A pass mark of 44 was also evaluated, as neither 44 nor 45 had been analysed as potential pass marks in the Performance Evaluation. These analyses were initially done with only the 2013/14 cohort, as data for the 2014/15 cohort was not available when this analysis was initially undertaken. These tables have since been updated with the data from the 2014/15 cohort when that data became available. This means the sample also includes students from the 2013/14 cohort who initially failed the BPTC, but were able to subsequently pass with a grade of Competent after retaking their exams in 2014/15.

The table below shows the impact of applying potential cut scores of 44 and 45 to the available sample (students from the 2013/14 and 2014/15 cohorts). The table shows the numbers and percentages of individuals who would pass the BCAT, pass the BPTC, pass above Competent, and fail the course based on BPTC final overall grades.

Impact of potential cut scores on BPTC Final Overall Grades

Outcome	Pass BCAT		Pass Course		Pass above C		Fail Course	
	N	%	N	%	N	%	N	%
37	2305	100.00%	1692	73.41%	1292	56.05%	613	26.59%
40	2254	97.79%	1669	74.05%	1279	56.74%	584	25.91%
43	2151	93.32%	1609	74.80%	1247	57.97%	542	25.20%
44	2112	91.63%	1592	75.38%	1238	58.62%	520	24.62%
45	2069	89.76%	1576	76.17%	1228	59.35%	493	23.83%
46	2010	87.20%	1542	76.72%	1209	60.15%	468	23.28%

With the top cut score (46) the number of candidates failing would reduce from 613 to 468; a reduction in failure rate of 23.7%. This reduction in failure rate is lower for less selective cut scores – a cut score of 45 reduces the failure rate by 19.6%, 44 by 15.2%, and 43 by 11.6%.

The table below shows a breakdown of the impact of the different potential cut scores on the individual BPTC final overall grade outcomes within the 2013/14 and 2014/15 BPTC cohort. For the most selective cut score (46), this would have resulted in 12.8% of trainees not being accepted onto the course. 83 (28.1%) of these students that would have failed to have been accepted onto the course would have passed the course with a grade of Very Competent or Outstanding (false negatives); this is 3.6% of the total population. For a pass mark of 45, 64 (27.1%) of those excluded would have passed the course with a grade of Very Competent or Outstanding – this is 2.8% of the total population.

Predicted test success rates at each grade, for the potential cut scores

Cut Score	Grade	Fail BCAT		Pass BCAT		Total
		N	%	N	%	
40	O	0	0.00%	209	100.00%	209
	VC	13	1.20%	1070	98.80%	1083
	C	10	2.50%	390	97.50%	400
	NYC	28	4.57%	585	95.43%	613
	Total	51	2.21%	2254	97.79%	2305
43	O	3	1.44%	206	98.56%	209
	VC	42	3.88%	1041	96.12%	1083
	C	38	9.50%	362	90.50%	400
	NYC	71	11.58%	542	88.42%	613
	Total	154	6.68%	2151	93.32%	2305
44	O	3	1.44%	206	98.56%	209
	VC	51	4.71%	1032	95.29%	1083
	C	46	11.50%	354	88.50%	400
	NYC	93	15.17%	520	84.83%	613
	Total	193	8.37%	2112	91.63%	2305
45	O	3	1.44%	206	98.56%	209
	VC	61	5.63%	1022	94.37%	1083
	C	52	13.00%	348	87.00%	400
	NYC	120	19.58%	493	80.42%	613
	Total	236	10.24%	2069	89.76%	2305
46	O	4	1.91%	205	98.09%	209
	VC	79	7.29%	1004	92.71%	1083
	C	67	16.75%	333	83.25%	400
	NYC	145	23.65%	468	76.35%	613
	Total	295	12.80%	2010	87.20%	2305

Adverse Impact Analysis

One of the key criteria when examining the cut score is the potential adverse impact on different groups of any change to the cut score. The analysis below provides an adverse

impact analysis for four potential cut scores (43, 44, 45 and 46) for ethnicity. For this analysis, each group is represented as a dichotomous variable.

The tables show the relative selection ratio for the groups compared, i.e. the ratio of the pass rate for the group with the lower success rate to that with the higher pass rate. Where this value is below 0.8 the selection fails the 'four fifths rule' and is considered to have significant adverse impact. The implication if this is the case in a real selection process is that people from the lower scoring group have less than 80% of the chance of people from the higher scoring group of passing the test. This analysis uses results data for all students taking the BCAT across the three full years the test has been in operation (2013, 2014 and 2015) rather than only those students who obtained a place on the course. As a result, this does not necessarily indicate that an increase in cut score would itself result in a lower chance of obtaining a place in the course for certain groups of candidates as not all students who pass the BCAT obtain a place. Differences in test scores will always exist between two groups, but unless this difference (i.e. the adverse impact) is deemed as significant, this should not be seen as a cause for concern, although it should continue to be monitored.

The Performance Evaluation indicated that only ethnicity exhibited potential adverse impact for some cut scores. This analysis evaluates two additional pass marks (44 and 45) for ethnicity. The analysis indicates that for black students the highest cut score examined (46) fails the 'four fifths rule', with black students having less than 80% of the chance of passing the BCAT than white students. However, for both the additional pass marks examined (44 and 45), the ratio remains within the 80:20 ratio. The same analysis was also undertaken with other diversity characteristics¹, with none breaching the 80:20 ratio indicating significant adverse impact at any of the potential cut scores.

Adverse impact analysis for Ethnicity (White, BME).

Cut Score	43		44		45		46	
	White	BME	White	BME	White	BME	White	BME
N	1773	2659	1749	2581	1731	2463	1710	2303
Proportion	94.71	89.05	93.43	86.44	92.47	82.48	91.35	77.13
Relative selection ratio	0.94		0.93		0.89		0.84	
Total	1872	2986	1872	2986	1872	2986	1872	2986

Adverse impact analysis for Ethnicity (White, Asian).

Cut Score	43		44		45		46	
	White	Asian	White	Asian	White	Asian	White	Asian
N	1773	2046	1749	1987	1731	1891	1710	1762
Proportion	94.71	90.45	93.43	87.84	92.47	83.60	91.35	77.90
Relative selection ratio	0.96		0.94		0.90		0.85	
Total	1872	2262	1872	2262	1872	2262	1872	2262

¹ Other available diversity data consisted of gender, domicile, English as a first language, age, first generation to attend university, state or fee paying school, disability, caring responsibilities (children or other), and sexual orientation.

Adverse impact analysis for Ethnicity (White, Black).

Cut Score	43		44		45		46	
	White	Black	White	Black	White	Black	White	Black
N	1773	322	1749	308	1731	297	1710	274
Proportion	94.71	80.10	93.43	76.62	92.47	73.88	91.35	68.16
Relative selection ratio	0.85		0.82		0.80		0.75	
Total	1872	402	1872	402	1872	402	1872	402