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Assessing the equivalencies of the UCAS tariff for different qualifications

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Introduction

In the United Kingdom (UK) the Universities and College Admissions Service (UCAS) provides the application process for most universities. The UCAS tariff points system is used by universities to help them select students for their courses. Each grade in eligible qualifications is allocated a points score, which can then be summed in order to provide an overall points score for each student. The allocation of points is such that, in theory, students with the same overall points score gained from different qualifications can be considered to be of equivalent ability or potential. The purpose of this article is to test whether this assumption works in practice, by calculating empirical equivalencies of the UCAS tariff for different qualifications.

In the past, UCAS has undertaken studies to try and determine what the tariff points scores should be for different grades achieved in any new qualifications to be considered under the tariff (e.g., UCAS, 2003; 2006). These included comparability studies carried out by an 'expert group', which compared the new qualification with a similar, benchmark qualification and provided recommendations for the number of tariff points allocated to each grade on the qualification. For example, the BTEC Nationals were first included in the tariff tables in 2003 following a comparability study with AQA's Advanced Certificates of Vocational Education (UCAS, 2003).

In these UCAS reports it is noted that a future review of the tariff points allocated to the qualification might be necessary once more evidence becomes available and once Higher Education (HE) admissions tutors have more experience in using the qualification to admit students. However, it is not clear how often this actually happens for individual qualifications. One study that did attempt to address this issue was undertaken by Green and Vignoles (2012). They used the future performance of students at university to make an empirical comparison between the tariff points allocated to A levels and the International Baccalaureate (IB) qualification. The present article seeks to update and extend their work by using more recent data and by also including BTEC qualifications in the comparisons.

One way of investigating the equivalence of tariff points for different qualifications is to compare the outcomes in terms of degree classification for students with the same UCAS tariff obtained from different qualifications. For example, Figure 1 shows the percentages of students achieving a First-class degree or at least an Upper Second-class degree, by their UCAS tariff score (tariff scores where fewer than 30 students achieved that score were excluded). Different lines are presented for students taking different qualifications (General Certificate of Education [GCE] Advanced levels [A levels] only, BTECs only, IB only or mixed).

This would seem to suggest that the current tariffs over-value BTECs and the IB compared with A levels, as the percentage of students achieving a First or at least an Upper Second is higher for A level students at any given UCAS tariff (except for IB students at the very top). However, this analysis does not take into account other factors that might have an influence on the probability of a good degree for a given UCAS tariff. These include the school and university attended and the degree subject, as well as student background characteristics such as gender and socio-economic background.

Data

The data for this research came from a linked dataset requested from the Department for Education. This request consisted of data from the National Pupil Database (NPD) and from the Higher Education Statistics Agency (HESA) student records' database, linked by a common student identifier. The data included information on:

- Degree studied by each student:
  - Institution identifier (anonymous)
  - Subject of study – subjects were classified into one of twenty different subject groups
  - Degree classification – First, Upper Second, Lower Second, Third (or below).
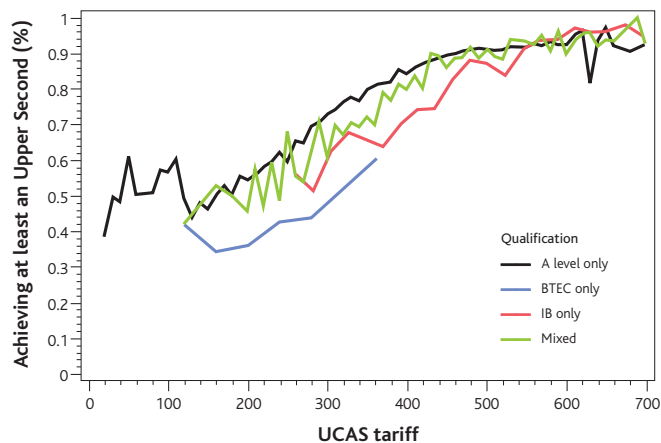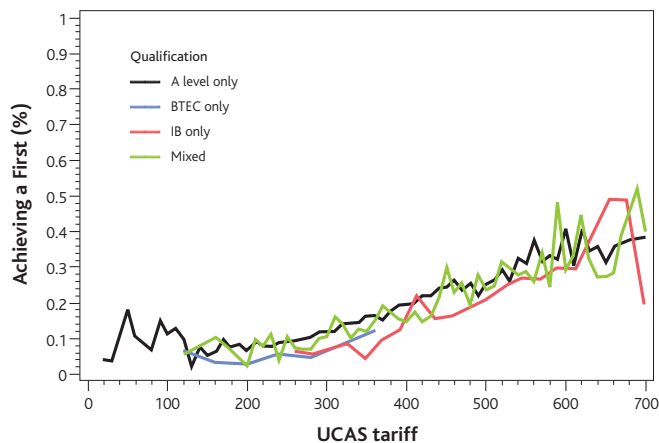
Figure 1: Percentage of students achieving a First- or Upper Second-class degree by UCAS tariff and prior qualification

- Students' prior attainment:
  - Qualifications taken at Level 3
  - Grades achieved in these qualifications
  - School type
- Students' background information:
  - Gender
  - Socio-economic classification, as determined by parents' occupation[1].

For the analysis undertaken in this article the data was limited to students on full-time, part-time or sandwich courses, achieving an honours degree. Two separate linkages of the HESA and NPD data were undertaken in order to capture two groups of students: those completing their degree three years after leaving school; and those completing their degree four years after leaving school. This second group of students included those taking four-year degrees and those taking a year out before university study. Thus the data consisted of students completing a first degree in 2012 or 2013, who were matched to prior attainment data from 2009.

The data from the two different groups was combined. Therefore, it was necessary to make the assumption that the standards in terms of degree class were the same in the two different years (2012 and 2013).

Method

This article investigates the accuracy of the equivalent UCAS tariff points allocated to different qualifications. The method used was to compare the performance at university of students with the same UCAS tariffs achieved through different qualifications. Initial investigation into the data revealed a very large number of different combinations of qualifications taken by students. In order to be able to make simple comparisons between different qualifications, it was decided to restrict the data to students taking one qualification only; that is, to exclude any students taking combinations of qualifications. The only exceptions to this rule were for students taking a combination of A levels and Advanced Subsidiary (AS) levels and students taking combinations of BTEC National

qualifications (e.g., a BTEC National Certificate combined with a BTEC National Award). Following this restriction there remained only three qualifications with enough students (with a degree result) to allow for valid comparisons to be made. These were A levels (and AS levels), International Baccalaureate (IB) and BTECs.

The IB is an international qualification, which is studied in many different countries and recognised by universities world-wide. To achieve an IB Diploma, students generally study six different subjects, three at Higher level and three at Standard level. For each of these they receive a grade from 0 to 7. They are also required to write an extended essay and undertake a course in the theory of knowledge, for which they receive a combined grade of between 0 and 3. This gives a maximum Diploma score of 45 points, with 24 required to be awarded a Diploma. The UCAS Expert Group first met in 2004 to benchmark three IB subjects to the equivalent A levels (UCAS, 2006). From this comparison, each IB Diploma points score was allocated a UCAS tariff points score. A review was then undertaken in 2008, which led to a revised tariff from 2010 onwards (the tariff was reduced at each IB points score). With this new tariff an IB points score of 45 was allocated 720 UCAS points (equivalent to six A grades at A level). The comparisons made in this research were with the revised tariff.

The BTEC qualifications that were included in this analysis were BTEC Nationals at Award, Certificate and Diploma level. These are worth one, two and three A levels respectively. Students taking the Diploma tended not to take any other qualifications, whilst those taking an Award or Certificate tended to combine it with other qualifications (usually other BTECs or A levels). The highest grade for a Diploma (DDD) was allocated 360 UCAS points (equivalent to three A grades at A level).

Restricting to these qualifications meant that four different comparisons were made:

1. A levels only *v* IB
2. A levels and AS levels *v* IB
3. A levels only *v* BTEC Diploma only
4. A levels and AS levels *v* BTECs.

It was decided not to make comparisons between IB and BTECs because they tend to be taken by students at the opposite ends of the ability scale who generally study different subjects at university (Vidal Rodeiro, Sutch & Zanini, 2013). Therefore it seems unlikely that many admissions tutors will be comparing students with these qualifications.

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1. Unless the student was aged 21 or over at the start of the course, in which case the classification refers to the student's occupation.

The method for making comparisons between the different qualifications was based on the method proposed by Green and Vignoles (2012). The basic idea was to use a statistical model to predict the probability of achieving a particular degree class (or higher), based on UCAS tariff. There should be a positive relationship, whereby a higher UCAS tariff is associated with a higher probability of a good degree. By including in the model an indicator of which qualification was taken, it was possible to determine whether students with a particular qualification had a higher probability of a good degree, for the same UCAS tariff. From the results of this model it was also possible to calculate equivalent tariffs for different qualifications; that is, for a student with a given UCAS tariff achieved through,(e.g., IB) what was the equivalent tariff achieved by a student through (e.g., A levels), such that the probability of achieving a good degree was the same for both students.

We used an ordered probit model, which allows for the rank of degree classification (First, Upper Second, Lower Second, and Third or Pass). The dependent variable was achieving each of these degree classes (or better) and the independent variables were the student's UCAS tariff[2], qualification taken, university attended, degree subject group, gender, socio-economic classification and school type. To account for possible differences in the relationship between UCAS tariff and degree classification between qualifications, an interaction term between qualification and UCAS tariff was also included. Finally, to account for the 'clustering' of students within schools, a multilevel model was used, with students nested within schools.

For each of the four comparisons being made, three separate models were run. The first of these included just the UCAS tariff, an indicator of the qualification taken and the interaction between them as the predictor variables. If the variable indicating the qualification taken had a parameter value that was statistically significantly different from zero then this means that, overall, the same tariff points had different predictions of degree performance depending on which qualification was taken. If such a difference was found between the qualifications then the inclusion of an interaction term allowed this to vary at different tariff levels. A second model included variables for the university attended and the degree subject group. Finally, student background variables (gender, socio-economic classification and school type) were added.

Initial data exploration revealed that in the data set there were some universities with only a handful of students. This meant that including the university as a variable in the model could have led to problems with the models converging. To overcome this issue, only universities where at least 10 IB students and 10 A level students attended were included.

Results

A levels only *v* IB only

Table 1 presents data on the distribution of UCAS tariff amongst students taking these qualifications, after restricting to institutions with at least 10 students from each group. This shows that IB students had a much higher mean UCAS tariff than those taking A levels only. Table 2 shows the distribution of degree class for students taking A levels only or IB. The IB students were more likely to achieve a First or an Upper Second than the A level only students.

2. This was calculated using the tariff tables available on the UCAS website: https://www.ucas.com/ucas/undergraduate/getting-started/entry-requirements/tariff/tariff-tables

Table 1: Distribution of UCAS tariff, by prior qualification

Qualification group	N	Mean	SD	Min	Max
A levels only	14,355	357.2	118.6	40	720
IB	1,135	504.4	109.8	260	720
All	**15,490**	**351.4**	**112.9**	**40**	**720**

Table 2: Distribution of degree class, by prior qualification

Qualification group	N	First (%)	Upper Second (%)	Lower Second (%)	Third/ Unclassified (%)
A levels only	14,355	17.3	57.8	21.8	3.1
IB	1,135	22.6	63.4	12.5	1.5
All	**15,490**	**17.7**	**58.2**	**21.2**	**3.0**

The results of the three different models are shown in Table 3. Statistically significant effects are shown in bold (standard errors in brackets). The parameters for the institution and subject group variables (included in Models 2 and 3) and student background variables (Model 3) are not included in this table because they are not directly relevant to the question being investigated. However, they are available on request. It is worth noting that all of these variables were statistically significant in the models.

Table 3: Model parameter estimates (A levels only *v* IB only)

Variable		Model 1	Model 2	Model 3
Intercept	First	**-3.828** (0.064)	**-4.627** (0.286)	**-4.948** (0.906)
	At least Upper Second	**-0.851** (0.055)	**-1.588** (0.283)	**-1.877** (0.905)
	At least Lower Second	**1.606** (0.068)	**0.908** (0.286)	0.641 (0.905)
UCAS tariff		**0.006** (0.000)	**0.007** (0.000)	**0.007** (0.000)
Qualification	[A levels only]			
	IB	**-0.224** (0.081)	**-0.313** (0.082)	**-0.281** (0.082)

In each model the variable for the qualification taken was statistically significant, suggesting that there was evidence of a difference in the predictions based on the UCAS points gained from the different qualifications. The qualification parameter estimate was negative for IB students compared to A level students, meaning that having the same tariff gained from IB was associated with a lower probability of achieving each degree class (or better). In other words, for a particular UCAS tariff, A level students were more likely to do better at university. The value of this parameter was higher for Models 2 and 3 than for Model 1. An interaction term between tariff and qualification was also included in each model to see if the effect was different at different tariff levels. However, this term was found to be non-significant.

We can use the parameter values (from the final model) to calculate the probabilities of achieving a First or at least an Upper Second, for students taking A levels or IB. The probabilities presented here were for students in the reference categories for institution (No.137), subject group (Education), gender (females), socio-economic classification (unemployed) and school type (other school). The results are shown in Figure 2.
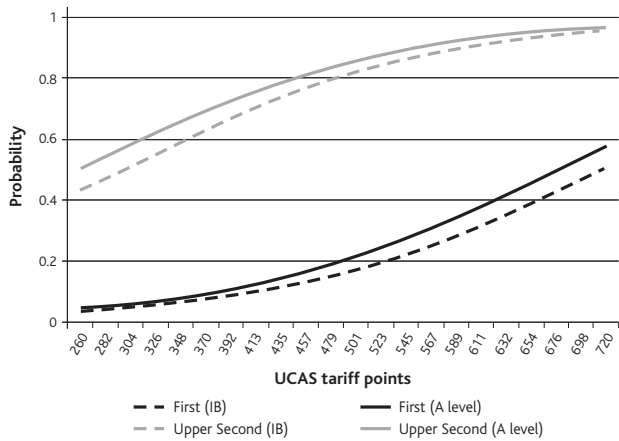
Figure 2: Modelled probabilities of achieving a First or at least an Upper Second-class degree, by UCAS tariff and prior qualification (A level only v IB only)

For an IB student with a UCAS tariff of 501 the probability of a First was 0.172, compared with 0.216 for A level students. For an IB student with a tariff of 720 the probability of a First was 0.507, compared with 0.576 for A level students.

The results of the models can also be used to calculate equivalent tariffs between the two qualifications; that is, for each IB tariff score (X), what is the A level tariff score (Y) which gives the same probability of achieving a First? Algebraically speaking we have the following equivalence:

P (First | AL tariff =Y) = P (First | IB tariff =X)

If we can find Y in terms of X then this will give us the A level tariff that is equivalent to each IB tariff. So, using the parameters in Model 3 we have:

-4.948 + 0.007*Y = -4.948 + 0.007*X − 0.281

Re-arranging gives:

Y = (0.007*X − 0.281) / 0.007

Or

Equivalent A level tariff = (0.007*IB tariff-0.281)/0.007 =
IB tariff − 38.5

This equation produces the equivalent tariffs shown in Figure 3. The dotted line is the line of perfect equivalence between the two qualifications (y=x), the continuous line is the equivalence according to the model.
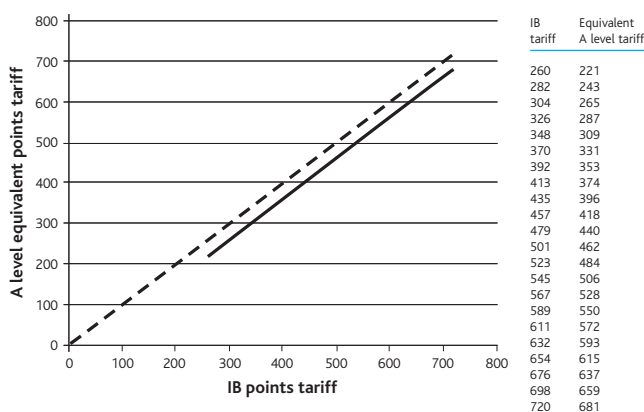

IB tariff	Equivalent A level tariff
260	221
282	243
304	265
326	287
348	309
370	331
392	353
413	374
435	396
457	418
479	440
501	462
523	484
545	506
567	528
589	550
611	572
632	593
654	615
676	637
698	659
720	681

Figure 3: Equivalent tariff scores (A level only v IB only)

This shows that, for example, the A level equivalent for IB students with 501 UCAS points was 462.

Thus, whichever model we use we find a similar effect, with the UCAS tariff from IB being over-valued slightly at all tariffs. The final model, controlling for institution, subject group and student background variables suggested that this was over-valued by 39 points.

A/AS levels v IB

The second set of models compared students taking combinations of A levels and AS levels (including A levels only) with IB students. Tables 4 and 5 present the UCAS tariffs and degree class distributions for students in the two groups. Students taking IB had a much higher UCAS tariff on average and were more likely to achieve a First-class degree.

Table 4: Distribution of UCAS tariff, by prior qualification

Qualification group	N	Mean	SD	Min	Max
A/AS levels	72,020	387.3	99.6	40	720
IB	1,135	504.4	109.8	260	720
All	**73,155**	**389.1**	**100.8**	**40**	**720**

Table 5: Distribution of degree class, by prior qualification

Qualification group	N	First (%)	Upper Second (%)	Lower Second (%)	Third/ Unclassified (%)
A/AS levels	72,020	18.5	61.0	18.2	2.3
IB	1,135	22.6	63.4	12.5	1.5
All	**73,155**	**18.6**	**61.0**	**18.1**	**2.3**

The results from the models are shown in Table 6. Again, the interaction between qualification and tariff was not significant.

There was a significant negative effect of having taken IB compared to A levels with AS levels. This effect increased slightly in Models 2 and 3, compared with Model 1. This was a very similar effect to that seen in the models using A levels only, although it was slightly larger here.

Table 6: Model parameter estimates (A/AS levels v IB)

Variable		Model 1	Model 2	Model 3
Intercept	First	**-4.211** (0.037)	**-4.675** (0.121)	**-4.928** (0.522)
	At least Upper Second	**-1.103** (0.033)	**-1.518** (0.119)	**-1.751** (0.522)
	At least Lower Second	**1.401** (0.039)	**1.012** (0.121)	**0.792** (0.522)
UCAS tariff		**0.007** (0.000)	**0.008** (0.000)	**0.008** (0.000)
Qualification	[A/AS levels]			
	IB	**-0.334** (0.076)	**-0.410** (0.076)	**-0.387** (0.076)

Figure 4 presents the probabilities for students in the two groups, using the final model parameter values (for a student in the reference categories for institution (No.204), subject group (Agriculture and related subjects), gender (males), socio-economic classification (unemployed) and school type (other school)).
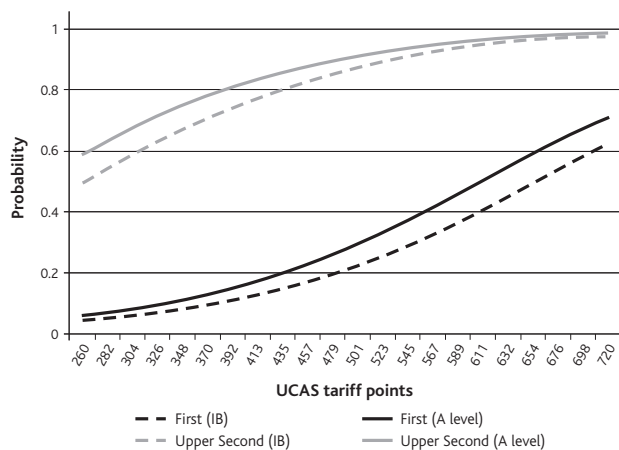
Figure 4: Modelled probabilities of achieving a First or at least an Upper Second-class degree, by UCAS tariff and prior qualification (A/AS level v IB)

For example, for an IB student with a tariff of 501 the probability of a First was 0.217, compared with 0.290 for an AS/A level student. The respective probabilities for students with a tariff of 720 were 0.618 and 0.704.

Equivalent tariffs were calculated using the following equivalence:

Equivalent A level tariff = (0.008*IB tariff-0.387)/0.008 =

    IB tariff − 48.1

The equivalent tariffs are shown in Figure 5. This shows that, for example, a UCAS tariff of 720 achieved from IB was equivalent to a tariff of 672 from A levels (over-valued by 48 points).
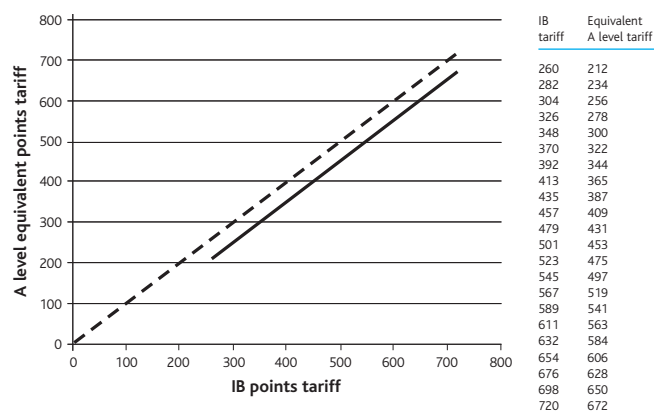

IB tariff	Equivalent A level tariff
260	212
282	234
304	256
326	278
348	300
370	322
392	344
413	365
435	387
457	409
479	431
501	453
523	475
545	497
567	519
589	541
611	563
632	584
654	606
676	628
698	650
720	672

Figure 5: Equivalent tariff scores (A/AS level v IB)

A levels only v BTEC Diploma only

The next set of models compared students taking A levels only with those taking a BTEC Diploma only. As before, only universities where at least 10 BTEC students and 10 A level students attended were included. A further restriction was added because there were only very few BTEC students with a UCAS tariff above 360 (maximum tariff for a BTEC Diploma). Thus, to make the comparison as valid as possible, A level students with a tariff above 360 were also excluded. Table 7 presents some details of the distribution of UCAS tariff for students with each of the qualifications.

Thus, BTEC students had higher UCAS tariffs on average. The A level students included here had a much lower mean tariff than the group of students who were compared to IB students. This is because this group were restricted to those with a tariff of 360 or below. Table 8 presents the degree outcomes of the two groups. This shows that A level students had a higher probability of a First or an Upper Second-class degree.

Table 7: Distribution of UCAS tariff, by prior qualification

Qualification group	N	Mean	SD	Min	Max
A levels only	23,270	247.5	63.1	40	360
BTEC	9,770	296.0	69.8	120	360
All	**33,040**	**261.8**	**68.8**	**40**	**360**

Table 8: Distribution of degree class, by prior qualification

Qualification group	N	First (%)	Upper Second (%)	Lower Second (%)	Third/ Unclassified (%)
A levels only	23,270	11.2	51.4	32.2	5.1
BTEC	9,770	8.2	40.3	41.2	10.2
All	**33,040**	**10.3**	**48.1**	**34.9**	**6.6**

The results of the models are presented in Table 9. In each model there was a significant negative effect of having taken BTECs, meaning that the probability of each degree class was lower for students with the same UCAS tariff from BTECs than from A levels. This effect was smaller in Model 2 than in Model 1, but larger in Model 3. This time the interaction between UCAS tariff and qualification was also significant and negative, meaning that the BTEC effect was larger at higher tariffs.

Table 9: Model parameter estimates (A levels only v BTEC Diploma only)

Variable		Model 1	Model 2	Model 3
Intercept	First	**-4.193** (0.059)	**-4.658** (0.261)	**-4.836** (0.290)
	At least Upper Second	**-1.512** (0.054)	**-1.194** (0.260)	**-2.081** (0.288)
	At least Lower Second	**0.944** (0.055)	**0.589** (0.260)	0.440 (0.289
UCAS tariff		**0.008** (0.000)	**0.009** (0.000)	**0.010** (0.000)
Qualification	[A levels only]			
	BTEC Diploma only	**-0.731** (0.102)	**-0.693** (0.104)	**-0.812** (0.109)
UCAS tariff* Qualification	[A levels only]			
	BTEC Diploma only	**-0.001** (0.000)	**-0.002** (0.000)	**-0.002** (0.000)

The probabilities of a good degree (using Model 3 parameters) are presented in Figure 6 (for a student in the reference categories for institution (No.109), subject group (Subjects allied to Medicine), gender (males), socio-economic classification (Lower supervisory and technical occupations) and school type (grammar school)).

This shows a big difference in probabilities between the two groups of students, which also increased (albeit only slightly) with UCAS tariff. Thus, a BTEC student with a UCAS tariff of 360 had a probability of 0.051 of a First and 0.458 of at least an Upper Second-class degree, compared with a probability of 0.199 of a First and of 0.796 of at least an Upper Second for an A level student.

With the significant interaction effect we have the following equivalence:

    -4.836 + 0.010*Y = -4.836 + 0.010*X − 0.812 − 0.002*X

    Or

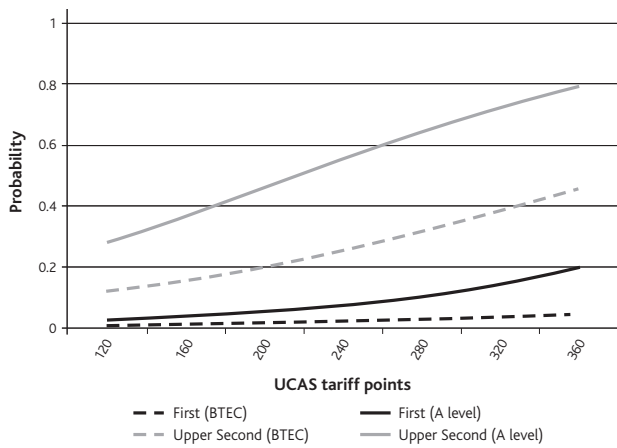   Equivalent A level tariff = (0.008*BTEC tariff-0.812)/0.010

Figure 6: Modelled probabilities of achieving a First or at least an Upper Second-class degree, by UCAS tariff and prior qualification (A level only v BTEC Diploma only)

The equivalent tariffs are presented in Figure 7. This shows, for example, that a BTEC tariff of 120 was equivalent to an A level tariff of 10; a BTEC tariff of 360 was equivalent to an A level tariff of 200.
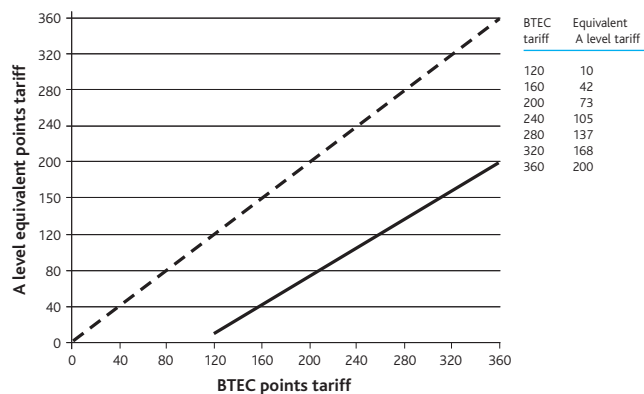

Figure 7: Equivalent tariff scores (A levels only v BTEC Diploma only)

A/AS level v BTECs

The final comparison made was between students taking a mix of A level and AS level qualifications and students taking a mix of BTEC qualifications. Only universities where at least 10 BTEC students and 10 A/AS level students attended were included. However, for this there was no need to remove students above a particular UCAS tariff because there were enough BTEC students with tariffs up to 720.

Table 10 presents some details of the distribution of UCAS tariff for students with each of the qualifications. Thus, A level students tend to have higher UCAS tariffs on average than BTEC students. Table 11 presents the degree outcomes of the two groups. This shows that A level students had a higher probability of a First or an Upper Second-class degree.

These results again suggest that the UCAS tariff is not correctly aligned between BTECs and A levels, with a significant effect for the qualification variable. The effect was negative for BTEC students and there was also a negative interaction effect, meaning that the negative BTEC effect was larger at higher UCAS tariffs. The BTEC effect was lower for Models 2 and 3 than for Model 1, but the interaction effect was larger.

Figure 8 presents the probabilities of achieving a good degree for the two different groups of students (for a student in the reference categories for institution (No.109), subject group (Subjects allied to Medicine), gender (females), socio-economic classification (Higher managerial and professional occupations) and school type (grammar school)).

Table 10: Distribution of UCAS tariff, by prior qualification

Qualification group	N	Mean	SD	Min	Max
A/AS levels	117,095	328.3	99.0	40	720
BTEC	12,395	289.7	88.9	40	720
All	**129,490**	**324.6**	**98.7**	**40**	**720**

Table 11: Distribution of degree class, by prior qualification

Qualification group	N	First (%)	Upper Second (%)	Lower Second (%)	Third/ Unclassified (%)
A/AS levels	117,095	16.5	56.6	23.7	3.3
BTEC	12,395	8.0	39.8	41.7	10.5
All	**129,490**	**15.6**	**55.0**	**25.4**	**4.0**

Table 12 presents the results of the models.

Table 12: Model parameter estimates (A/AS levels v BTECs)

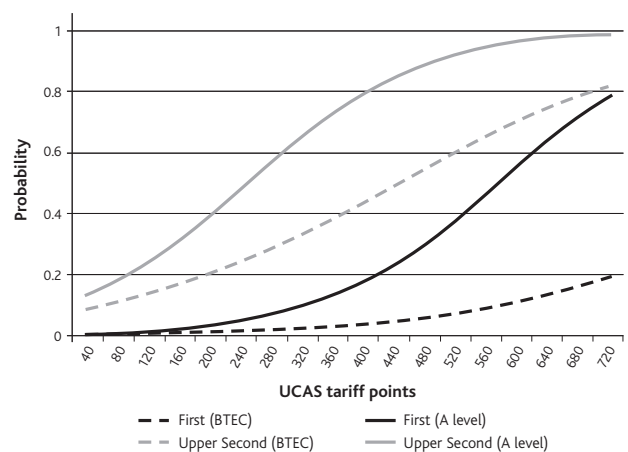| Variable		Model 1	Model 2	Model 3
Intercept	First	**-4.128** (0.257)	**-5.102** (0.300)	**-5.169** (0.085)
	At least Upper Second	**-1.254** (0.225)	**-2.159** (0.300)	**-2.213** (0.084)
	At least Lower Second	**1.222** (0.253)	0.356 (0.300)	0.322 (0.085)
UCAS tariff		**0.007** (0.000)	**0.009** (0.000)	**0.009** (0.000)
Qualification	[A/AS levels]			
	BTEC	**-0.421** (0.064)	**-0.243** (0.066)	**-0.255** (0.068)
UCAS tariff* qualification	[A/AS levels]			
	BTEC	**-0.002** (0.000)	**-0.003** (0.000)	**-0.003** (0.000)

Figure 8: Modelled probabilities of achieving a First or at least an Upper Second-class degree, by UCAS tariff and prior qualification (A/AS levels v BTECs)

The differences in probabilities were large, particularly at the top end of the UCAS tariffs. A BTEC student with a tariff of 720 had a probability of a First of just 0.19, compared with a probability of 0.79 for an A level student with the same tariff. The equivalent tariffs were calculated, as follows:

Equivalent A level tariff = (0.006*BTEC tariff-0.255)/0.009

This produced the equivalent tariffs presented in Figure 9. Again, this demonstrates the large over-valuation of BTEC grades in the current UCAS tariff. For example, the A level equivalent for BTEC students with 200 UCAS points was 95, whilst for BTEC students with 720 UCAS points it was 416. However, there were very few BTEC students with UCAS tariffs above 500, so we need to exercise caution in making comparisons above this value.
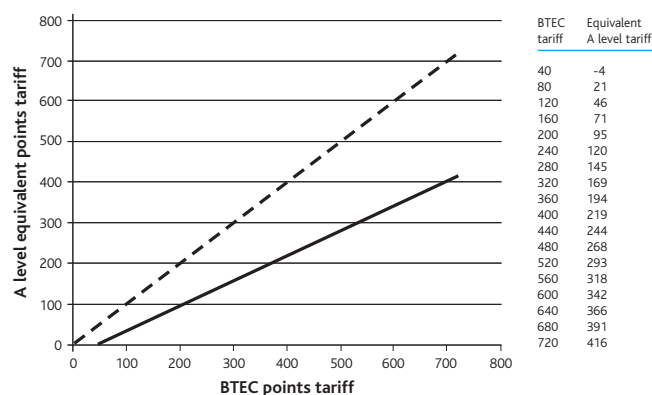

BTEC tariff	Equivalent A level tariff
40	-4
80	21
120	46
160	71
200	95
240	120
280	145
320	169
360	194
400	219
440	244
480	268
520	293
560	318
600	342
640	366
680	391
720	416

Figure 9: Equivalent tariff scores (A/AS levels *v* BTECs)

Discussion

The claim made in UCAS Expert Group reports (which detail how new qualifications are allocated tariff points) is that one purpose of the UCAS tariff is to 'allow broad comparisons to be made between different types of achievement and different volumes of study' (UCAS, 2003). An implication is that, broadly speaking, students achieving the same UCAS tariff through different qualifications should have the same probability of achieving a good degree. This research has investigated whether this is true in practice, by making comparisons between A levels, IB and BTECs.

The results of the analyses presented here suggest that (after accounting for the institution attended, the degree subject studied and a number of student background characteristics) the current UCAS tariff slightly over-values the IB, in terms of students' probabilities of achieving a good degree, compared to the tariff for A levels. The models suggest that an IB points score is equivalent to an A level points score 39 points lower (for those taking A levels only) and 48 points lower (for those taking a mix of A levels and AS levels). An A level grade is worth 20 UCAS points, so this difference is equivalent to between two and two and a half A level grades.

This contrasts somewhat with the results of Green and Vignoles (2012). They found that the differences between IB and A levels varied across the ability range, with the current UCAS tariff over-valuing IB below an IB points score of 38 (tariff of 567), but under-valuing IB above this points score.

However, there is a potential issue with comparing directly the UCAS tariffs of A level and IB students, because almost all IB students took the same number of subjects (three at Standard level and three at Higher level), whereas the A level students with the highest tariffs were likely to have taken more A levels than those with lower tariffs. Because of this, there may be some attenuation of the worth of UCAS points at the top end for A level students. For example, a student with 5 A*s (700 points) may not be much better in terms of ability than one with 4 A*s

(560 points). This suggests that the model used to predict the probability of a First/Upper Second-class degree for A level students may over-value the effect of more UCAS points at the top end. Therefore, it may be that a better predictor of university performance would be a mean A level measure. This suggestion is supported by research undertaken by the author which indicates that A level mean was a more influential measure of achievement than A level total tariff score, in terms of predicting university outcomes (Gill, 2015).

In the comparison of A levels and BTECs there was a much larger difference, with the current BTEC tariff being highly over-valued. There was also a significant interaction effect between the type of qualification and the UCAS tariff, which meant that the over-valuation increased at higher UCAS tariffs. According to the model, the maximum tariff for those taking a BTEC Diploma only (360) was equivalent to a tariff of just 200 from A levels. Similarly, for those taking combinations of BTECs, a tariff of 360 was equivalent to a tariff of just 194 from A levels. This suggests that a re-valuation of the tariff points allocated to BTEC Nationals may be necessary.

It should be noted that when UCAS determined the points scores for BTEC grades, no direct comparison was made with A levels (BTEC Nationals were compared to Advanced Vocational Certificates of Education [AVCEs] by the Expert Group). Indeed, given the very different nature of the two qualifications, it would probably be difficult to make such comparisons. Furthermore, it is likely that admissions tutors do not often have to make direct comparisons between BTEC students and A level students.

However, given that the UCAS tariff points are meant to be (broadly) equivalent for every qualification, some other method of calculating equivalent points scores might be advisable. An alternative might be to apply the equivalencies determined by a statistical model run on data from prior years (such as the one applied here) to the results achieved by students in the current year. For example, to make BTECs and A levels approximately equivalent we could give the maximum grade for a BTEC Diploma (DDD) 200 UCAS points, rather than the current 360. However, there are a number of drawbacks with this approach, mainly due to the significant time delay whilst the first cohort(s) of students taking a qualification complete their university studies.

Finally, it is worth considering the approach of admissions tutors in relation to the UCAS tariff. It may be that experienced admissions staff have perceptions of the relative worth of UCAS tariff scores achieved from different qualifications and adjust their offers accordingly. If these perceptions are accurate then this suggests that they can overcome any under- or over-valuation of particular qualifications. Green and Vignoles' (2012) analysis suggested that admissions tutors did have a different perception of the equivalence between IB and A level tariff points than the official tariff. However, they found that this perception did not agree with the equivalence derived from their modelling (admissions tutors rated points scores from the IB more highly at the bottom of the scale, but less highly at the top of the scale). Furthermore, for new qualifications or inexperienced admissions tutors, the official UCAS tariff may be the only source of information.

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Taking risks and being creative: Assessment in Drama and Theatre

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Introduction

In this article we discuss the concept of creativity and its assessment. Creativity is critical to many subjects in secondary education, including Drama and Theatre, but is not easy to assess. Whilst there is a need for reliable assessments at General Certificate of Education (GCE) Advanced Level (A level), the validity and integrity of what is taught are also essential. We describe a small-scale study in which four course leaders at Higher Education Institutions (HEIs) were interviewed about Drama at undergraduate level. The aims of this study were to gain an insight into undergraduate assessment practices, and to identify any lessons to be learned and applied at A level.

Creativity as a concept

A varied range of creative subjects are on offer at GCSE and A level, and whilst the term 'creativity' is broadly understood and widely used in education, its precise definition has divided opinion for many years. In 1969, Barron defined creativity as "the ability to bring something new into existence" (as cited in Gallagher, 2007, p.1230). However, Bruner (1979) put forward the notion that creativity "confirms something that we already knew subconsciously" (as cited in Gallagher, 2007, p.1230). Gallagher (2007) discusses the concept of creativity in the context of Drama education, and after reviewing the literature in detail, still comes up short when trying to find an applicable definition, or in finding suitable studies that attempt to define creativity in Drama.

Politically, creativity gained importance during the rise of 'New Labour', when the economic benefits of creativity were highlighted (Buckingham & Jones, 2001) and the term 'democratic creativity' was introduced. This term was used by the National Advisory Committee on Creativity and Cultural Education (NACCCE) in its report *All Our Futures: Creativity, Culture and Education* which argued that creative and cultural education was the key to unlocking "Britain's economic prosperity and social cohesion." (NACCCE, 1999, p.5). The report defined creativity as "imaginative activity fashioned so as to produce outcomes that are both

original and of value" (NACCCE, 1999, p.30). Within this definition, the NACCCE clarifies that creativity relates to four characteristics: *imagination*; *purpose*; *originality*; and *value*. *Imagination* refers to generating new ideas or to approaching ideas from a new perspective. *Purpose* refers to the creative process an individual undertakes when developing a product. The third characteristic, *originality*, is relative and refers to ideas or thoughts that are original compared to an individual's ideas, a group's ideas, or historic ideas. Lastly, *value* refers to the judgement of the work in relation to the purpose. It can refer to self or critical evaluation of the finished art form, and can be individual or shared. The NACCCE definition of creativity coheres more with Barron's definition than with Bruner's, focusing on the originality of ideas and their subsequent value.

Regardless of differences in definitions, the common themes revolve around new ideas or remodelled ideas that have value and purpose and are explored through a clear creative process (Beghetto, 2005). However due to its multi-faceted nature, creativity does not seem to be an easy skill to teach, let alone assess. Unlike the ability to add or subtract numbers, creativity cannot be taught explicitly, and is also difficult to measure systematically. The NACCCE draws on research by Woods (1995) to suggest that teachers can encourage creativity by ensuring autonomy and respect on both sides of the student-teacher relationship, authenticity in initiatives and responses, and fulfilment. Moreover, an element of trust is necessary, as the aims of so-called 'teaching for creativity' are to encourage self-confidence, independence of mind, and the capacity to think for oneself (Woods, 1995).

The teacher-student relationship is particularly important as it can foster creative thinking in students, enabling them to take risks and develop new and original ideas. The research literature indicates that positive perceptions of teacher support increase individuals' risk-taking in, and motivation towards, many subjects, including those that are not widely viewed as creative, such as Mathematics and the Sciences (Alonso-Tapia & Pardo, 2006; Kalchman & Koedinger, 2005; Nickerson, 1999). Those teachers who do not welcome students' ideas discourage students from taking risks and being creative in their classrooms (Kennedy, 2005). Furthermore, risk-taking and consequent creative