



JISC

AMBeR
PROJECT

Academic Misconduct Benchmarking Research Project: Part II

*The Recorded Incidence of Student Plagiarism and the Penalties
Applied*

Tennant P and Duggan F

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Part II: The Recorded Incidence of Student Plagiarism and Penalties Applied

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1) Introduction

The first phase of the JISC-funded Academic Misconduct Benchmarking Research Project (AMBeR) sought to investigate the range and spread of penalties available for student plagiarism, as stated in the regulations of UK Higher Education Institutions (HEI's). The study 'identified substantial variation throughout the HE sector in the penalties available for student plagiarism and in the procedures involved in their recommendation.' (Tennant et al, 2007) Moreover, it highlighted that 'a large minority of HEIs are currently using regulations that provide only limited guidance regarding the assignment of penalties for plagiarism.' (Tennant et al, 2007)

The motivation for the study, and the subsequent research detailed in this report, is a commonly held concern within the HE sector that the application of penalties for student plagiarism is inconsistent (Mainka and Raeburn, 2007). When defining consistency, Carroll and Seymour (Carroll and Seymour, 2006) noted, 'a consistent decision would be one where two people apply the same level of penalty when presented with cases with similar characteristics and contexts.' However, they added that, even in a single institution, 'achieving this level of consistency proved to be a very challenging goal.' Similar sentiments were expressed by Park when he explained that, 'devising a ladder of penalties is one thing, operating it consistently across the institution is

another.' (Park, 2004).

There is, however, an historical lack of research regarding the application of penalties for student plagiarism (Park, 2004). This is despite a recognised risk of legal complications for those institutions that fail to adequately define and apply their procedures (Baty, 2006). While the first stage of the AMBeR project revealed which penalties were most commonly available, it raised questions about the actual *application* of these penalties. This second stage thus set out to investigate the number of penalties applied for student plagiarism whilst also taking the opportunity to measure the recorded number of cases. Despite the concerns expressed above, it is testament to the goodwill in the sector that sufficient data was collected to enable a 'national' perspective to be drawn from the data received.

2) Methods

2.1) Defining the census

The first stage of the AMBeR project defined a list of 168 UK HEIs according to the following inclusion criteria:

- That they receive funding from either The Higher Education Funding Council for England (HEFCE), The Scottish Further and Higher Education Funding Council (SFC), The Higher Education Funding Council for Wales (HEFCW) or The

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Northern Ireland Higher Education Council (NIHEC).

- That they offer at least one taught qualification equivalent to a minimum of Level 6 on the National Qualifications Framework (e.g. a Bachelor's degree).

2.2) Contacting the census

During March and April 2007, all 168 HEIs were re-contacted for this second stage of the AMBeR project. Institutions that had replied to the first stage of the AMBeR project were contacted by email, using the address of the replier. Where this address was no longer valid, and for institutions that did not take part in the previous stage, contact was made according to an iterative process. Individuals were nominated for each HEI and asked to complete a questionnaire. HEIs that did not respond to this initial request were sent follow-up requests, both to the original contact and to alternative contacts, by email, telephone and post. Initially, institutions were asked to reply within one month, however this was

extended to three, and eventually six months in order to allow for maximum response.

2.3) The AMBeR Questionnaire

An electronic questionnaire was designed by the research team and piloted within the host institution and a number of participants in the first stage of the AMBeR project. Comments made by the pilot respondents regarding clarity and the availability of data were collated and the survey was redesigned accordingly. Full details of the questionnaire are shown in Appendix 6.2. Briefly, it consisted of two sections; the first asked for details of the number of cases of plagiarism recorded for one academic year, while the second asked for details of the penalties applied. HEIs were given the choice of one of three academic years (2004/05, 2005/06, or 2006/07) from which to complete the study. Data from all three years were pooled to produce a 'chosen year'.

2.4) The AMBeR Groups

The previous stage of the AMBeR project identified that the vast majority of HEIs (79.1%) fell into one of three groups defined by their penalty gradation

Table 1

Descriptive statistics for institutions belonging to the three 'AMBeR groups'. Values are the median for the group.

	Full Time UG Students	Part Time UG Students	Full Time PG Students	Part Time PG Students	Teaching Funding (£M)	Research Funding (£M)	RAE Average Per Staff	Student UCAS Score
All HEIs	6775	2120	1070	1460	23.3	1.5	3.5	283
Group A	1778	628	370	718	10.1	1.0	3.1	265
Group B	7855	2010	1525	1890	25.8	8.2	4.9	343
Group C	8335	4437	1182	2432	35.1	1.3	2.6	247

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score (PGS), a value that was derived from an institution's plagiarism penalty guidelines (group A HEIs had PGS = 0, group B HEIs had PGS between 50 and 57.5 and group C HEIs had PGS between 65 and 72.5). These groups were shown to be significantly different in terms of various descriptive statistics such as the number of students, source of funding, RAE average and intake (See table 1). To further the understanding of these 'AMBeR groups', all analyses in this study were performed both at the national level and broken down by group.

2.5) Statistical Analyses

The reported incidence of plagiarism was expressed as a proportion of the institution size. The number of undergraduate students and the number of taught postgraduate students in each institution were obtained from the Higher Education Statistics Agency (Higher Education Statistics Agency, 2006 & Higher Education Statistics Agency, 2007). Institutions that provided an incomplete response were weighted appropriately.

National estimates were obtained by weighted mean, with weighting being calculated on a per-question basis. Weighting was assigned so that the response profile was reflective of the national population in terms of the expected PGS distribution (See appendix 6.2). Institutions with no PGS value were weighted with a value of 1 (i.e. unchanged). No weighting was performed for

within group estimates, such as for the 'AMBeR groups'. The Kruskal Wallis H test was used to compare values between groups.

In order to examine what factors influence the allocation of severe penalties, a linear regression was performed. The dependent variable was the proportion of degree-level penalties. Three variables were tested as predictive variables: the proportion of postgraduate students, the proportion of subsequent offenders, and a PGS-derived group variable (A, B, C, other). All continuous variables were ranked to account for the non-parametric distributions.

Analyses were performed using Stata version 9.2. Statistical significance was defined as $p < 0.05$ while borderline significance was defined as $0.05 < p < 0.1$. Graphs and charts were drawn using Microsoft Excel 2007 SP1.

3) Results

Part A: The Response

3.1) What was the response to the survey?

Of the 168 institutions contacted, 100 responded to the survey. This compares very favourably with the 31 responses received by a similar study conducted by BBC Radio 4's 'The World at One' in July 2003 (Stubbings & Brine, 2003).

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Table 2 shows the information that was provided from the respondent institutions. From the sample of 100, 93 HEIs provided an estimate of the total number of cases of plagiarism in the chosen year and 86 provided an estimate of the number of penalties assigned, with just three institutions unable to answer any of the questions in the survey. The vast majority (over 80) reported the number of undergraduate and the number of taught postgraduate offences. However, variations in recording procedures meant that several respondents were unable further to categorise cases by academic level and previous history of offence. Indeed, only half of the respondent HEIs reported the number of cases in each specific undergraduate year, although this may have been negatively influenced by confusion regarding foundation (Level 0) years, particularly in Scottish institutions (one institution reported that the Level 1, 2 and 3 classification was not applicable to their teaching system). When it came to dividing the cases according to the previous history of the student, around two thirds of institutions were able to report the number of first offenders and the number of subsequent offenders. In

total, seven respondent institutions were unable to provide an answer to any of the questions regarding the number of cases of plagiarism and a further three did not provide any more information than the total cases in the chosen year.

3.2) Was the sample representative of the total population of HEIs?

To test the representativeness of the sample, the proportion of HEIs in each of the AMBeR groups were compared between those that responded to the survey and those that did not respond. A statistically significant shortage of group A HEIs was found among the respondent institutions, which appeared to be replaced by an excess of

Table 2

Although 100 higher education institutions (HEIs) replied to the survey, not all of these could fully complete the questionnaire. This table shows the number of institutions that provided answers to the main questions in the survey.

Information	Number of HEIs that provided an answer
All higher education students	93
All undergraduate students	81
Level 1 (certificate) students	42
Level 2 (diploma) students	44
Level 3 (bachelors) students	52
All <i>taught</i> postgraduate students	80
All first offences	70
All subsequent offences	66
All second offences	62
All third offences	57
All fourth offences	56
Number and type of penalties applied	86

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group B and C HEIs - see figure 1. Since this could have biased the results, national estimates were weighted to reflect the expected national profile (see Appendix 6.2). In terms of potential explanations, it is possible that the relative lack of resources in group A HEIs means they were less able to dedicate the required time to the survey. Alternatively, they may not have had the necessary recording mechanisms in place.

Part B: The Incidence

3.3) What was the incidence of plagiarism for all higher education students?

Table 3 shows the number of cases of plagiarism covered by the survey, and for each individual question. Overall, there were 9229 cases of plagiarism reported by 93 institutions. When adjusted

Figure 1

The profile of the responding higher education institutions (HEIs) was significantly different from the non-responding institutions ($p=0.012$), due to an apparent shortage of group A institutions, which was replaced by excess of group B and C HEIs. To adjust for this response bias, national estimates were weighted to match the expected national profile (see Appendix 6.2).

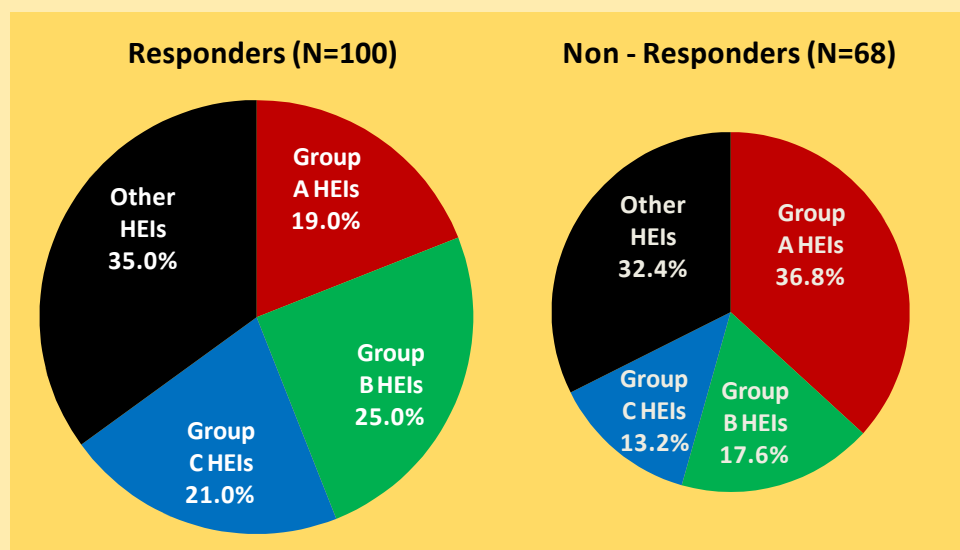


Table 3

This table shows the number of cases of plagiarism reported in the survey for each population or sub-population of higher education students.

Population	Total number of cases in sample
All higher education students	9229
All undergraduate students	6312
Level 1 (certificate) students	957
Level 2 (diploma) students	1177
Level 3 (bachelors) students	1651
All <i>taught</i> postgraduate students	1714
All first offences	5623
All subsequent offences	615
All second offences	354
All third offences	33
All fourth offences	6

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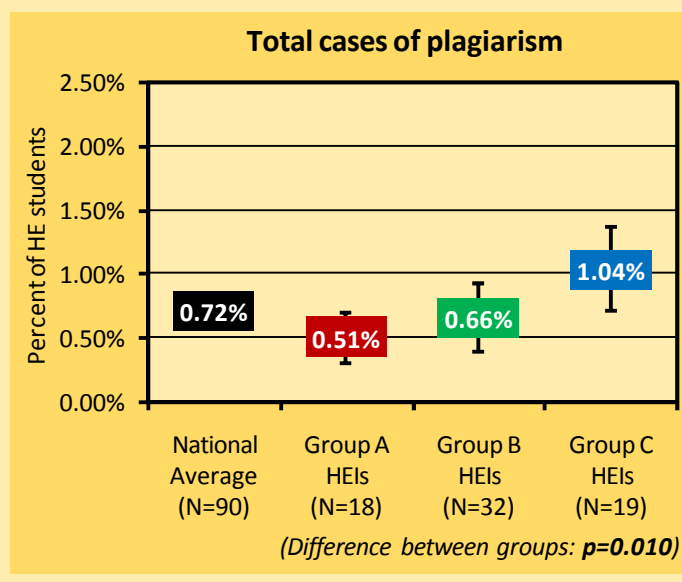
for institution size and weighted to match the expected national profile (see Appendix 6.2) this equates to a national recorded incidence for all higher education students of 0.72% (95% CI: 0.59, 0.85), equivalent to 7.2 cases for every 1,000 students. This figure is substantially lower than the 25% of respondents that indicated that they had plagiarised, at least once, in the 2004 survey conducted by FreshMinds (Martell, 2004). One possible explanation for this is the difference between the incidence of plagiarism reported by students (which may include mild infringements), and the type of cases that are likely to be formally recorded (which are likely to be more serious in nature). This would appear to be supported by the approximate similarity with the estimate obtained by BBC Radio 4's 'World at One' survey, which also investigated the recorded rate¹.

When the recorded incidence of plagiarism was compared between the different AMBeR groups, a statistically significant variation was observed ($p=0.010$) – see figure 2. Group A appeared to have the smallest recorded rate of plagiarism at 0.51% (95% CI: 0.31, 0.70) while group B was approximately a third larger [0.66% (95% CI: 0.39, 0.93)] and group C was over twice as large [1.04% (95% CI: 0.72, 1.37)]. There are several possible reasons for this variation. Firstly, it may represent differential recording preferences between the

different groups; with the larger institutions (those of group B and C) either keeping more detailed records, or possessing easier access to these records. Secondly, it could represent different numbers of referrals in the different types of HEIs, with staff in group A HEIs being more reluctant to engage with official procedures due to the high level of potential variation in the possible penalty (the defining feature of group A HEIs – see Tennant et al, 2007). Finally, it could be due to genuinely different rates of plagiarism in different HEIs, although this conclusion cannot be drawn from this study in isolation.

Figure 2

The recorded incidence of plagiarism among all higher education students (mean \pm 95% confidence interval). The national estimate is weighted to match the expected national profile.



¹This study identified 9229 cases from 93 institutions, while the 'World at One' study identified 1600 cases from 31 institutions. These figures are approximately similar in magnitude, although it is not possible to say exactly how similar they are, because 'The World at One' survey did not include information on size, and type of the institutions involved.

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3.4) What was the incidence of plagiarism among undergraduate students

Eighty one institutions detailed the number of undergraduate cases of plagiarism in the chosen year. The estimated national incidence of plagiarism among undergraduate students was 0.67% (95% CI: 0.53, 0.82), equivalent to 6.7 cases for every 1,000 students. Borderline significant variation was observed between these rates for the different AMBeR groups ($p=0.074$) – see figure 3. While both groups A and B institutions had similar recorded undergraduate rates of plagiarism [Group A: 0.56% (95% CI: 0.33, 0.79), Group B: 0.62% (95% CI: 0.37, 0.87)], the incidence was nearly twice as large among group C institutions [1.00% (95% CI: 0.61, 1.39)].

Figure 3

The recorded incidence of plagiarism among undergraduate students (mean \pm 95% confidence interval). The national estimate is weighted to match the expected national profile.

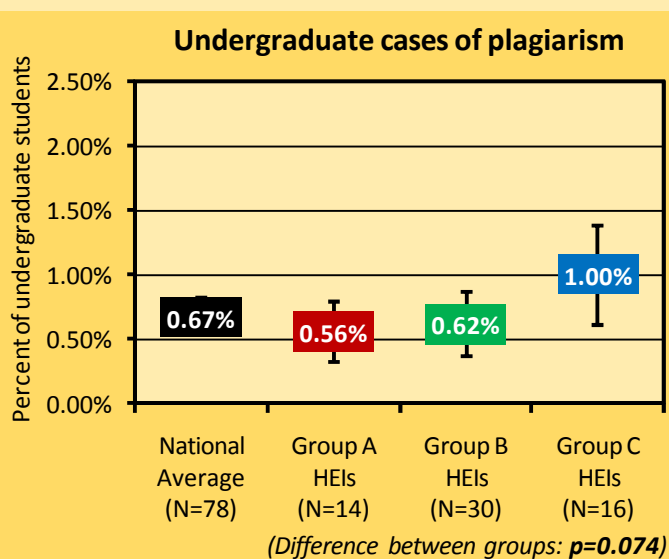
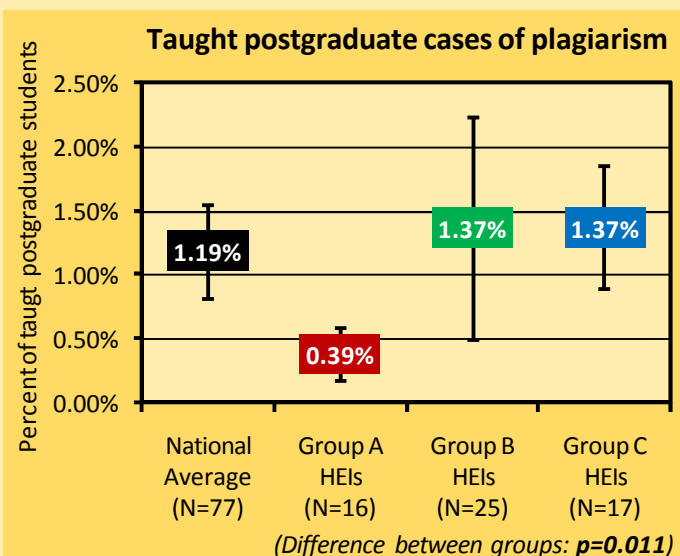


Figure 4

The recorded incidence of plagiarism among taught postgraduate students (mean \pm 95% confidence interval). The national estimate is weighted to match the expected national profile.



3.5) What was the incidence of plagiarism among taught postgraduate students?

Eighty institutions detailed the number of taught postgraduate cases of plagiarism in the chosen year. The estimated national incidence of plagiarism among taught postgraduate students was 1.19% (95% CI: 0.82, 1.55), equivalent to 11.9 cases for every 1,000 students. Statistically significant variation was observed between these rates for the different AMBeR groups ($p=0.011$) – see figure 4. Group A institutions had a relatively low taught postgraduate rate of plagiarism, at just 0.39% (95% CI: 0.18, 0.59). In contrast, the incidence of recorded postgraduate plagiarism in group B and group C HEIs was over three times

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larger [group B: 1.37% (95% CI: 0.50, 2.24), group C: 1.37% (95% CI: 0.89, 1.85)], although it is noteworthy that there was a large variation in this value among group B HEIs.

It was surprising to observe that the recorded level of plagiarism among postgraduate students (1.19%) was so much higher than the recorded level among undergraduate students (0.67%). The traditional view is that inexperienced pupils entering higher education are the most likely to commit plagiarism due to a lack of skills in academic literacy and citation techniques. Although the figures reported here could suggest a contradiction to this hypothesis, it is more likely that plagiarism is simply treated as a more serious

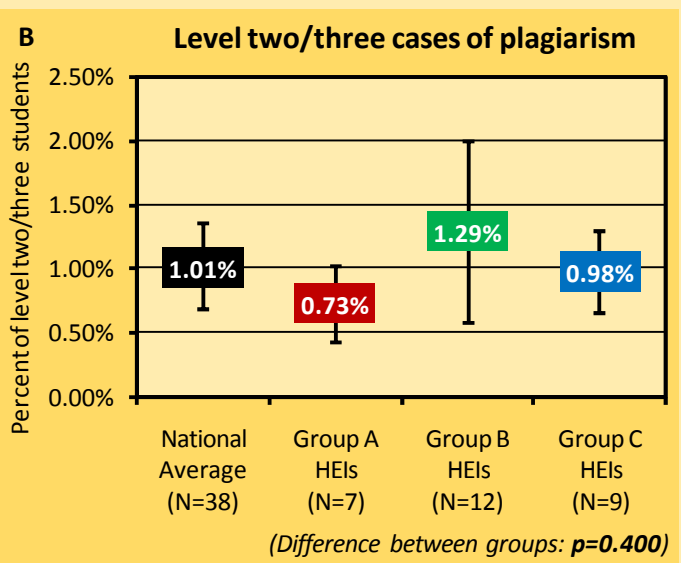
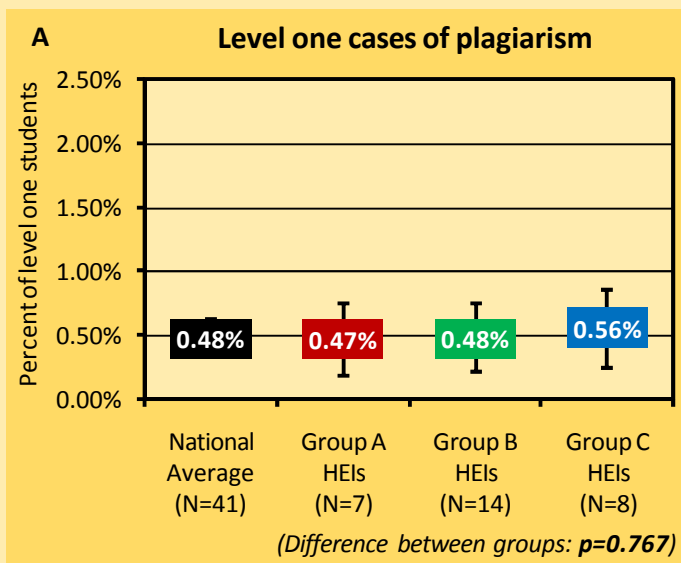
issue at postgraduate level, thus reducing the number of cases that avoid formal record. Unfortunately, this is impossible to corroborate without further research.

3.6) How were the undergraduate cases distributed by academic level?

Figures 5A and 5B show the recorded rates of plagiarism for all level one (certificate) undergraduate students and all levels two and three (diploma and bachelors) undergraduate students for the chosen year. The estimated national incidence of plagiarism among level one students was 0.48% (95% CI: 0.33, 0.62), equivalent to 4.8 cases for every 1,000 students. In contrast, the estimated national incidence of plagiarism among level two or level three students

Figure 5

The recorded incidence of plagiarism among level one (certificate) undergraduate students (A) (mean \pm 95% confidence interval) and level two and three (diploma and bachelors) undergraduate students (B) (mean \pm 95% confidence interval). National estimates are weighted to match the expected national profile.



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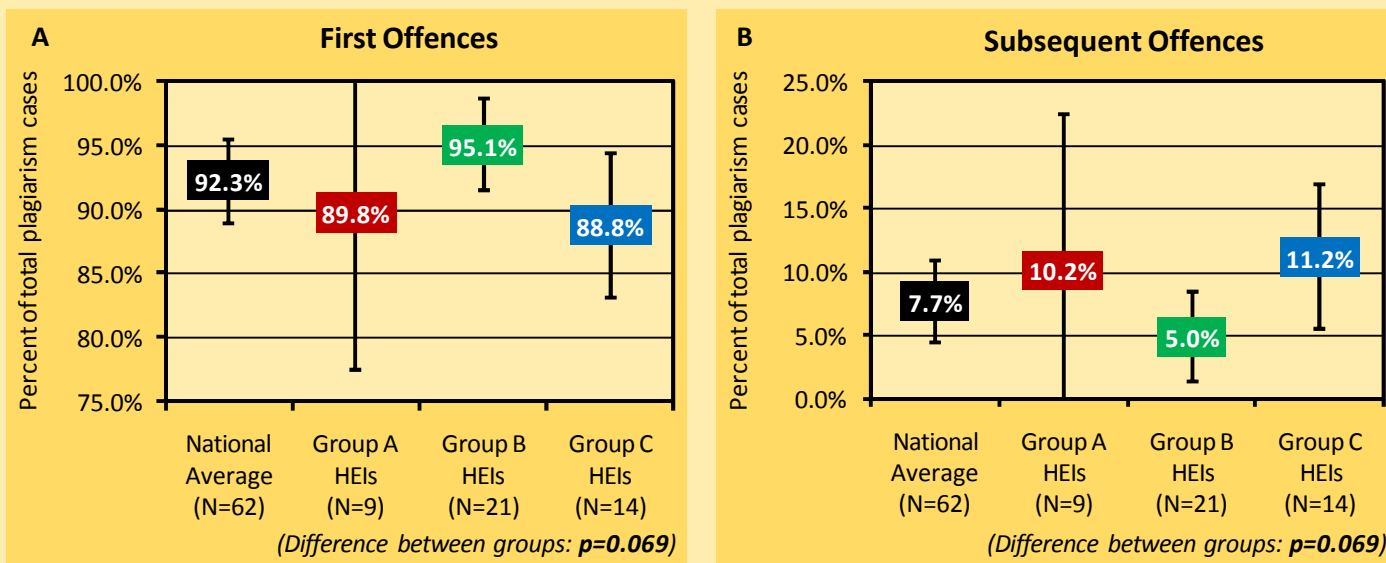
was over twice as large at 1.01% (95% CI: 0.68, 1.35), equivalent to 10.1 cases for every 1,000 students. No significant variation was observed between these rates for the different AMBeR groups (Level one: $p=0.767$, level two/three: $p=0.400$). Rather than being the result of a genuine lack of variation, this is most likely due to the relatively small number of institutions that were able to answer these questions. Despite this, it is worth noting that, for all groups, the recorded rate of plagiarism was significantly higher at level two/three than it was at level one (group A: $p=0.028$, group B: $p=0.008$, group C: $p=0.012$). Again, it is impossible to say whether this is due to additional cases of plagiarism in higher level students or, as suggested in the previous section, increased engagement with the formal procedures.

3.7) What proportion of cases were first offences?

Figures 6A and 6B show the proportion of recorded offences that were first offences and subsequent offences respectively. Nationally, 92.3% (95% CI: 89.0, 95.6) of recorded cases of plagiarism were first offences. Between the AMBeR groups there was a borderline significant difference in the different proportions ($p=0.069$). Both group A and group C HEIs had a slightly lower than average proportion of first offences, with 89.8% (95% CI: 77.5, 100.0) and 88.8% (83.1, 94.5) respectively (although the large uncertainty on these estimates should be noted). In contrast, first offences made up a noticeably larger proportion of the total number of recorded offences in group B HEIs, at 95.1% (95% CI: 91.5, 98.7). This value

Figure 6

The proportion of total cases of plagiarism that were first offences (A) (mean \pm 95% confidence interval) and subsequent offences (B) (mean \pm 95% confidence interval). National estimates are weighted to match the expected national profile.



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suggests that less than 5% of recorded cases of plagiarism in group B institutions are re-offenders.

Overall, these figures are likely to make reassuring reading. Despite the debate regarding the appropriate treatment of a student plagiarist (Woessner 2004) the relatively low national proportion of subsequent offences suggests that current policies are, at least, moderately successful in educating the student or deterring further infringement. It is risky, however, to equate the relatively small differences between the AMBeR groups as indications of 'better' or 'worse' policies. Indeed, it is possible that these fluctuations are again due to differential recording procedures, rather than real differences in the number of re-offenders.

One notable concern, however, is the inability of a minority of institutions to supply information on the breakdown of plagiarism cases by previous history. The previous stage of the AMBeR project identified that 72% of HEIs advised their staff to consider the previous history of the student when assigning a penalty (Tennant et al, 2007). It is therefore particularly surprising that,

from these same institutions, a quarter of the responders (27.6%) could not supply information on the number of first / subsequent offenders.

Part C: The Penalties

3.8) What penalties were applied for cases of plagiarism?

In addition to investigating the number of cases of plagiarism, this study also sought to identify the range and nature of the penalties applied. 86 institutions provided details of the penalties assigned for cases of plagiarism during the chosen year. In total, 8799 penalties were reported in the survey – see table 4. In some cases, these were exclusive while in others these were applied

Table 4

This table shows the total recorded number of penalties applied for student plagiarism in 86 higher education institutions.

Penalty	Number Assigned (From 86 HEIs)
Informal or verbal warning / reprimand	421
Formal or written warning / reprimand	2192
Fine	1
Resubmission of <i>assessment</i> with no cap on mark	498
Marks deducted from <i>assessment</i> , grade above pass	497
<i>Assessment</i> mark reduced to a pass	137
Resubmission of <i>assessment</i> for a pass mark	2372
<i>Assessment</i> mark reduced to a fail/zero with no resit	929
Marks deducted from <i>module</i> , grade above pass	13
<i>Module</i> mark reduced to a pass	36
Resit of <i>module</i> for a pass mark	922
<i>Module</i> mark reduced to a fail/ zero with no resit	175
Suspension	196
Reduced or capped final degree mark / classification	67
Re-sit of academic year for a for a pass mark	66
Reduced qualification (i.e. honours→ordinary)	134
Student failed or expelled from programme	143

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alongside other penalties. Numerically, resubmission of an assessment for a reduced or capped mark was the most widely applied penalty, with over 2372 occurrences. Formal warnings were next with 2192. It is not possible to say how many of these warnings were applied exclusively, and how many were applied alongside other penalties, however, as only 36.6% of institutional regulations listed warnings as exclusive penalties then a large

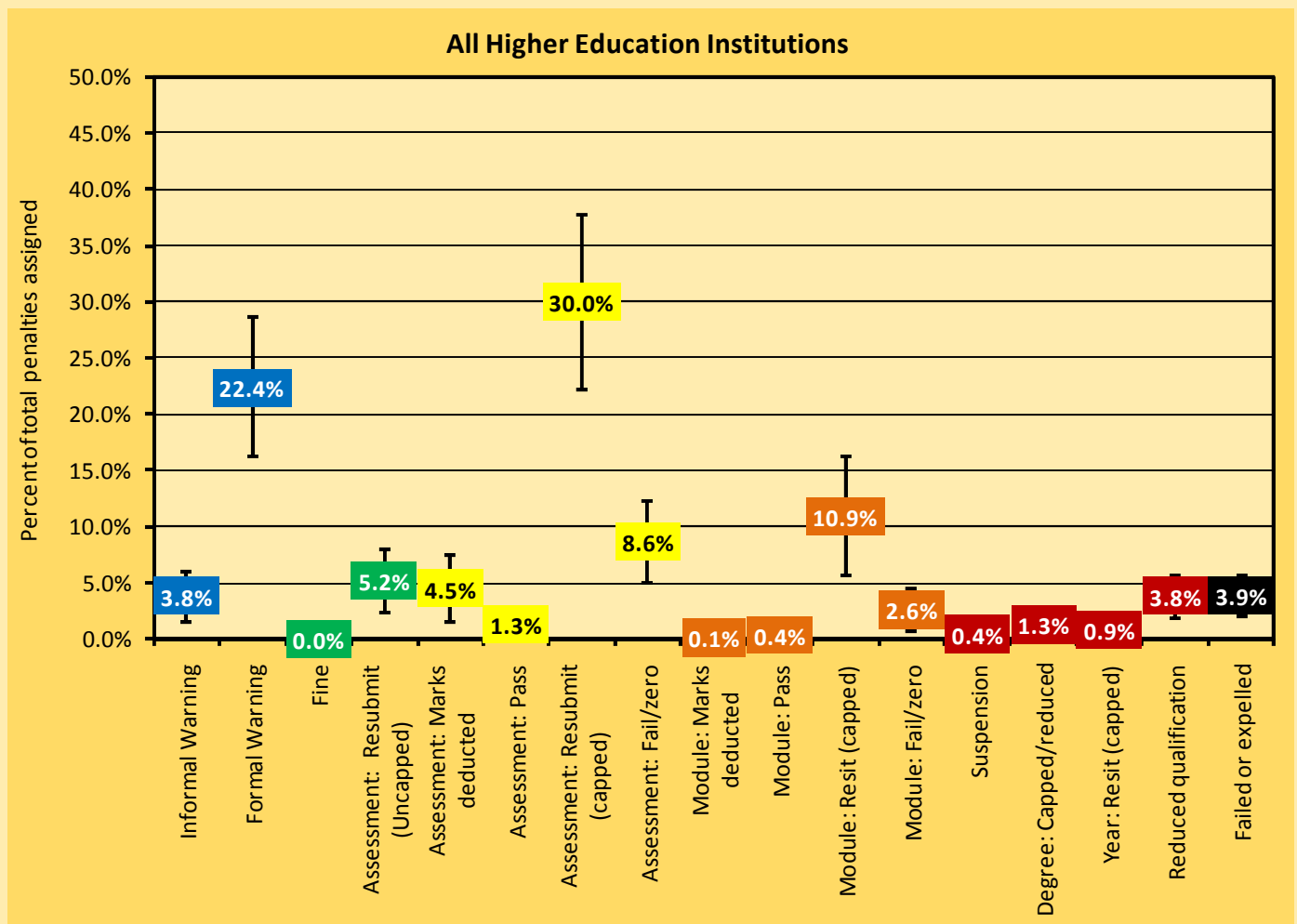
proportion of these are likely to have been combined with other sanctions. It is particularly noteworthy that 143 students were expelled for acts of plagiarism during the chosen year.

3.9) How common were these penalties?

Figure 7 shows the proportion of each penalty as a percentage of the total number of penalties applied. The two most common penalties,

Figure 7

The estimated national utilisation of each penalty as a percentage of the total number of penalties applied (mean \pm 95% confidence interval). Estimates have been weighted to match the expected national profile.



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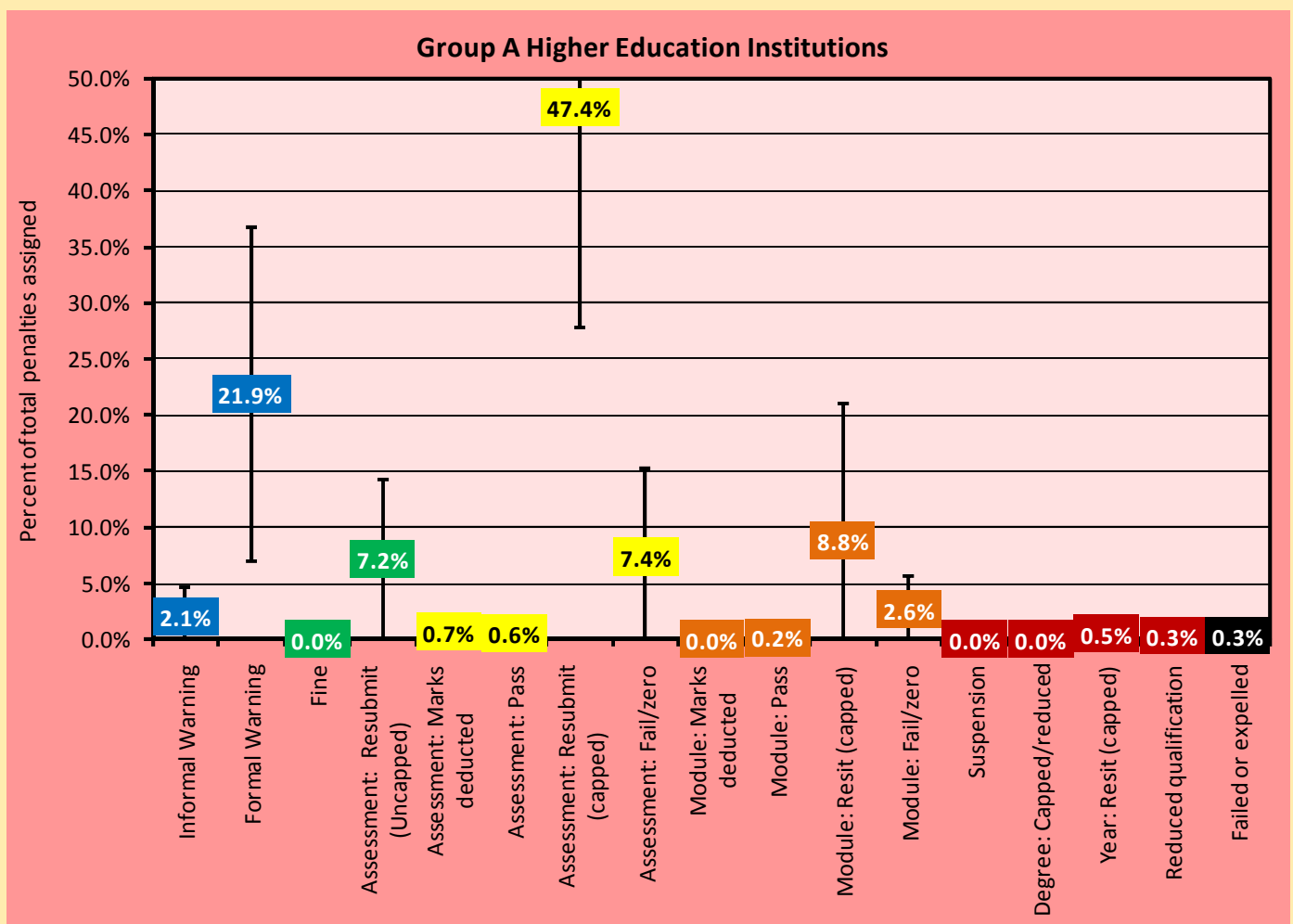
resubmission of an assessment for a capped (or reduced) mark and assigning a formal warning (or reprimand) represented over half of all penalties assigned at 30.0% (95% CI: 22.2, 37.7) and 22.4% (95% CI: 16.2, 28.6) respectively. Approximately one tenth [10.2% (95% CI: 6.0, 14.5)] of recorded penalties were degree-level penalties (i.e.

penalties that are most seriously likely to affect the outcome of the degree) with 3.9% (95% CI: 2.0, 5.7) being expulsions.

Figures 8, 9, and 10 show the penalty breakdown for groups A, B, and C respectively. The large confidence intervals for some penalties indicate

Figure 8

The estimated utilisation of each penalty as a percentage of the total number of penalties applied (mean \pm 95% confidence interval) among group A higher education institution (HEIs). Group A institutions are predominantly 'smaller HEIs with low income for both teaching and research (although the teaching income per student is actually substantially higher than the national average)' (Tennant et al, 2007)



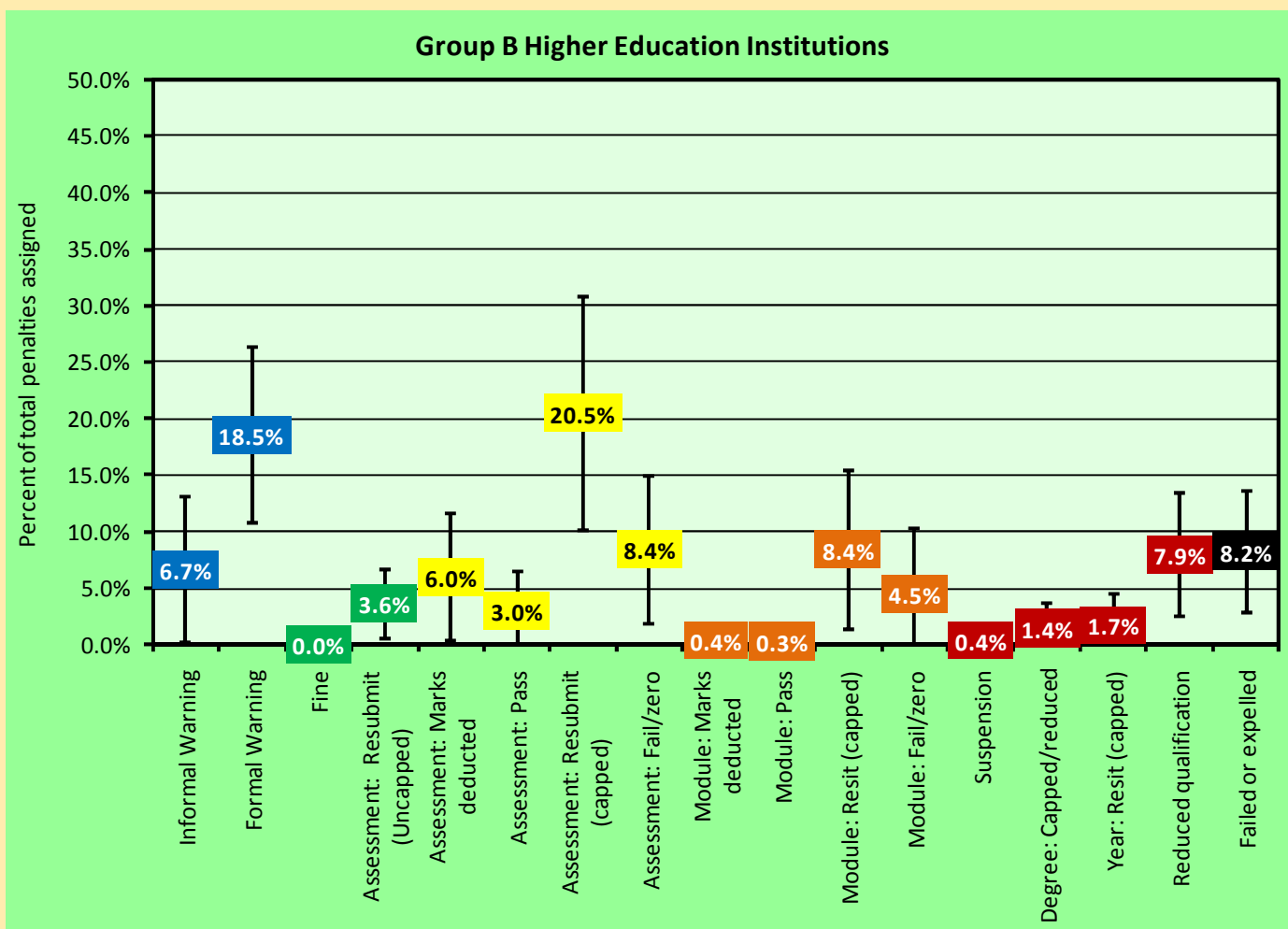
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heavy variation within groups; however, there were larger differences between the three groups. For example, the most common penalty, resubmission of an assessment for a capped or reduced mark ($p=0.046$), accounted for over twice the number of recorded penalties in group A HEIs [47.4% (95% CI: 27.8, 67.0)] compared to group B

HEIs [20.5% (95% CI: 10.2, 30.8)]. However, the degree-level penalties varied most substantially. Reducing, or capping, the degree mark ($p=0.043$), reducing the final qualification ($p=0.008$) and expelling the student ($p=0.003$) were all differentially employed in the different groups. While less than 1% of the recorded penalties in

Figure 9

The estimated utilisation of each penalty as a percentage of the total number of penalties applied (mean \pm 95% confidence interval) among group B higher education institution (HEIs). Group B institutions are predominantly 'larger institutions with a particularly large number of full time postgraduate students, large average research funding and higher than average RAE average per staff and UCAS points per student' (Tennant et al, 2007)



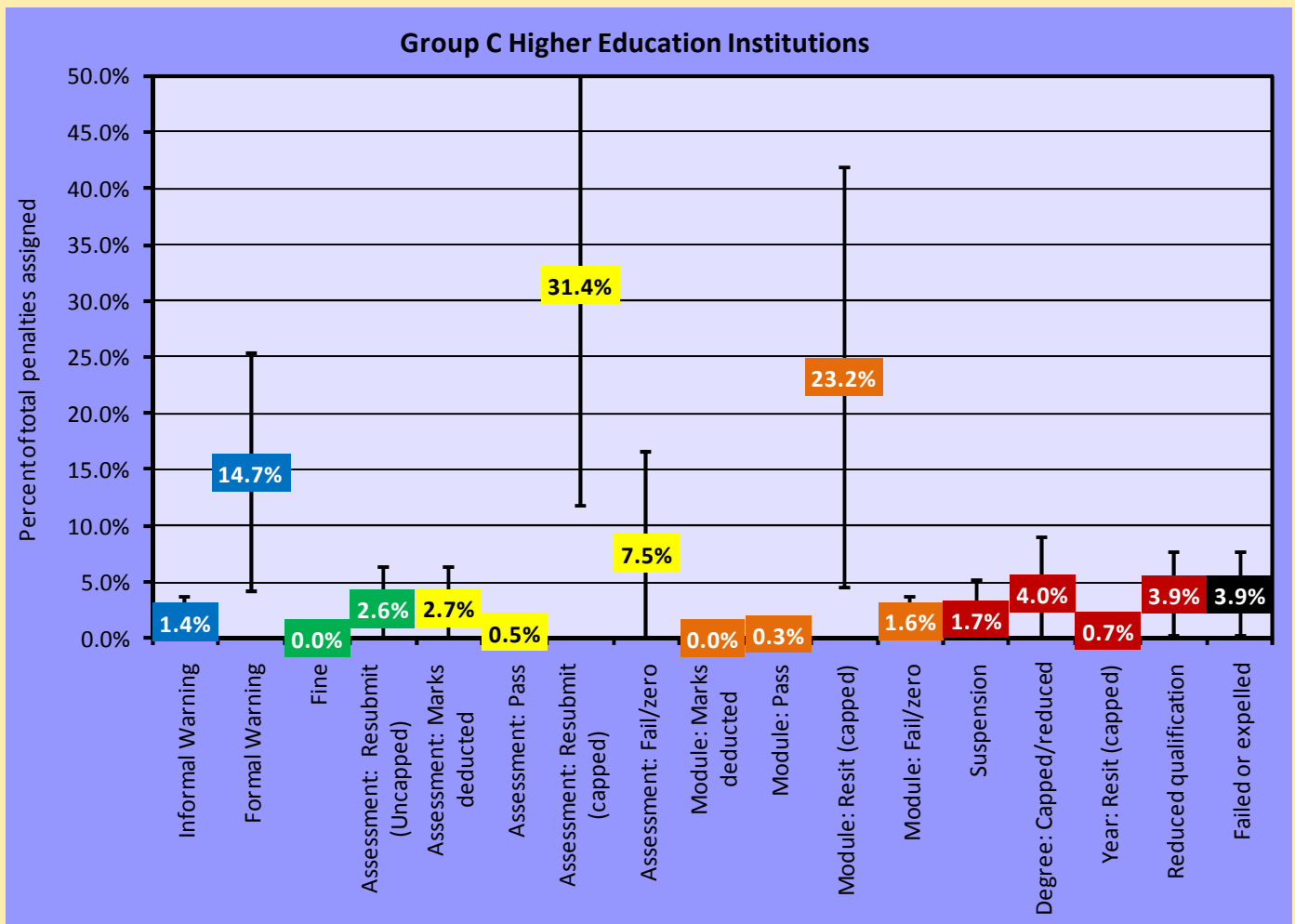
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group A HEIs were expulsions [0.3% (95% CI: 0.0, 0.8)], this was nearer 4% in group C HEIs [3.9% (95% CI: 0.1, 7.6)] and 8% in group B HEIs [7.9% (95% CI: 2.5, 13.4)]. A similar trend was observed for reduction in final qualification. Reducing, or capping, the degree mark was extremely rare in group A HEIs [0.0% (95% CI: 0.0, 1.4)], while it

reached 4.0% (95% CI: 0.0, 9.0) in group C HEIs. Overall, the degree-level penalties were highly significantly ($p < 0.001$) less common in group A HEIs [1.2% (95% CI: 0.0, 2.9)] compared to groups B [19.7% (95% CI: 8.8, 30.5)] and C [14.0% (95% CI: 1.7, 27.3)]- see figure 11.

Figure 10

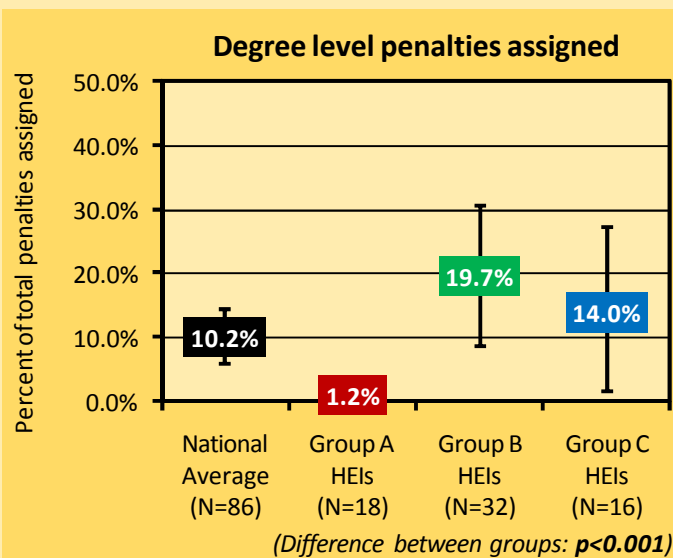
The estimated utilisation of each penalty as a percentage of the total number of penalties applied (mean \pm 95% confidence interval) among group C higher education institution (HEIs). Group C institutions are predominantly 'larger institutions... with a higher (than average) number of part time students, and lower (than) average RAE per staff and UCAS points per student' (Tennant et al, 2007)



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Figure 11

The percentage of total recorded penalties that were 'degree-level' penalties (i.e. penalties that are most seriously likely to affect the outcome of the degree) (mean \pm 95% confidence interval). The national estimate is weighted to match the expected national profile.



3.10) Can the varied rate of degree-level penalties be explained by different numbers of postgraduate cases and subsequent offenders?

A regression model was used to examine the national variation in the proportion of degree-level penalties. Only a very small amount of the variation was explained by the proportion of subsequent offenders (1.1%). In comparison, the proportion of postgraduate offences significantly ($p=0.041$) explained 6.2% of the variation. This, however, was far less than the 20.3% that was explained by the AMBeR group variable ($p=0.006$). This suggests that the inherent characteristics of an institution are considerably more important in

predicting the likelihood of a severe penalty than the nature of the offence, at least in terms of previous history and academic level.

3.11) Were any students assigned a degree-level penalty for a first offence?

In 22 HEIs (4 group A, 11 group B and 2 group C) all of the recorded cases of plagiarism were first offences. Despite this, these institutions reported that 71 degree-level penalties, including 12 expulsions, had been applied. This would appear to substantiate one of the findings of the first AMBeR report that 'low academic level... (does not itself) compensate if the offence is deemed sufficiently 'severe' in other respects'.

4) Conclusion

This study examined the recorded incidence of student plagiarism as well as the type and number of penalties applied. The overall national rate of student plagiarism was estimated to be 0.72%, with a larger proportion recorded at postgraduate level (1.19%) compared to undergraduate level (0.67%). Of these, the vast majority (92.3%) were first, rather than subsequent, offences.

In terms of penalties, resubmission of an assessment for a capped (or reduced) mark (30.0%) and formal warnings (or reprimands) (22.4%) were shown to be the most common, representing over half of all penalties assigned. However, one tenth of recorded penalties were of the type that would seriously impact the final

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degree classification, including a small, but noteworthy number of expulsions (3.9%).

Like the previous report, this study identified substantial variation across the sector that was distinguished by the presence of clustering. The first stage of the AMBeR project objectively defined three groups, according to the plagiarism penalty tariff (Tennant et al, 2007). Although these groups were later shown to be significantly different in terms of various features (see table 1), it was nevertheless surprising that they again demonstrated distinctive characteristics. Group A institutions (predominantly consisting of smaller HEIs with low overall incomes), for example, reported far lower recorded rates of plagiarism than the HEIs from groups B and C. Similarly, the proportion of degree level penalties assigned in these institutions was over 15 times smaller than the equivalent rate in group B HEIs (predominantly larger institutions with a large proportion of full time postgraduate students, large average research funding and higher than average RAE average per staff and UCAS points per student). Most noteworthy was the observation that these groups were considerably more important in predicting the number of severe penalties than the proportion of either postgraduate offences or subsequent offences. The challenge for the future is to translate these pockets of consistency into a unified national consensus on the management of plagiarism. In the meantime, institutions are urged

improve their existing recording procedures to aid transparency and communication within the sector.

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6) Appendices

6.1) Limitations

Certain methodological limitations necessitate mention. Firstly, as this study was conducted by questionnaire, there were cases where individual HEIs felt they could not provide a precise answer (e.g. where they wanted to report a penalty not mentioned in the available list). In these cases, the nearest answer was chosen after liaison with the researcher, or post-hoc by the researcher alone. To prevent bias, these decisions were made prior to any pooling or analysis of the data. Secondly, because the questionnaire was self-completed, it is not possible to say with certainty that each question was answered in the same way by each institution. Indeed, comments attached to some questionnaire responses indicate that while some institutions provided information on all recorded cases, others only included the details of cases that had been referred to a central academic misconduct panel. Similarly, in answering the number of penalties applied, it would appear that while the majority of institutions replied on a per student basis (by listing the maximum penalty awarded for a particular case), many completed the questionnaire on a per-penalty basis (i.e. by listing all penalties applied, even if this resulted in more penalties than cases). Both of these issues are clearly potential sources of error, and should be considered in interpreting the results. However, since there was no particular pattern in these choices, then they are unlikely to have biased the results.

6.2) How the results were weighted

The first stage of the AMBeR project examined the penalties available for student plagiarism in 153 out of 168 HEIs. After careful study of each set of guidelines, a score - known as the penalty gradation score (PGS) - was assigned to each institution according to the degree of graduation that was present within the penalty tariff (Tennant et al, 2007).

Rather than being random, the distribution of PGS values throughout the sector was shown to adopt an unusual pattern with 79.1% falling into one of three discrete regions, later named group A, group B and group C – see figure 12. As well as possessing different penalty tariffs, the HEIs in these groups were also distinct in terms of various demographic characteristics such as the number of students, the main funding source, and the average entry score of the student intake.

Given the absence of bias in the original study, this PGS distribution can be considered as a demographic footprint of the HE sector. For an unbiased response to any future study, the PGS values of the

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Figure 12

The first stage of the AMBeR project assigned a score, known as the penalty gradation score (PGS), to 153 higher education institutions (HEIs) according to the degree of graduation that was present within the student plagiarism penalty tariff. Nationally, the PGS was shown to adopt an unusual distribution which can be considered to be a demographic footprint of the higher education sector.

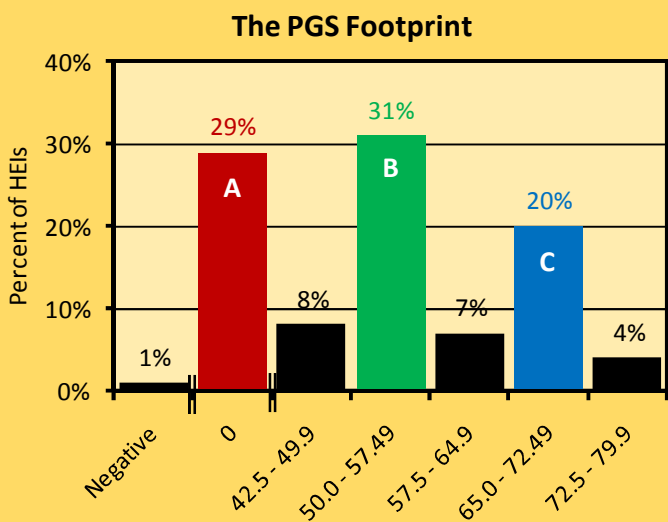
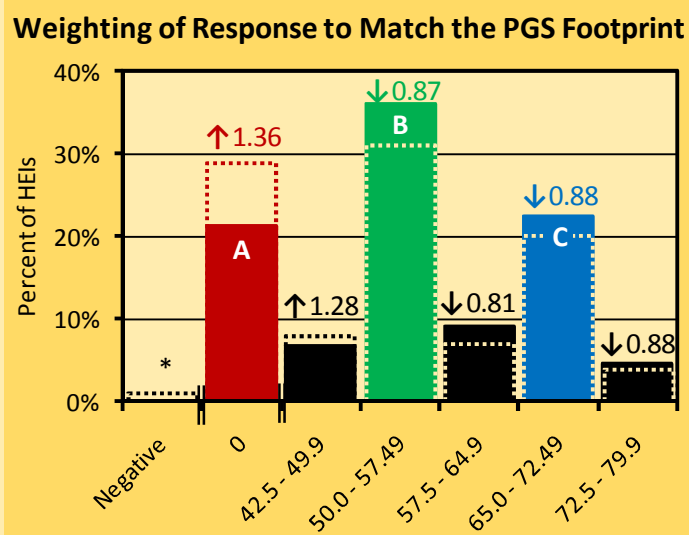


Figure 13

In order to produce statistics that were robust to response bias, all national estimates were weighted to match the expected penalty gradation score (PGS) distribution. Each group of 7.5 points (e.g. between 50 and <57.5) was weighted up or down (as appropriate) to match the expected proportion for that sub-population.



respondents would therefore be expected to follow a similar distribution to this known PGS footprint.

In the current study, this was not the case. Instead, there was a significant lack of responses from HEIs with low PGS values, such as group A HEIs. Because this might have biased the national estimates, an adjustment was performed. Responses were weighted so that the contribution of each PGS group (after weighting) was the same as the expected PGS footprint – see figure 13. This process is similar to the procedure used by political pollsters, but using PGS categories, rather than, for example, socio-economic groups.

Because each question was answered by a slightly different sub-population (see table 2), separate weights were calculated for each question. In addition, for the four institutions with no PGS value, the data was left unchanged.

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6.3) The Academic Misconduct Benchmarking Research (AMBeR) Questionnaire

Selecting an Academic Year

This questionnaire asks for detailed information regarding plagiarism incidents during an individual academic year. Generally, this would be for the academic year 2005/06; however, we appreciate that such information may not yet be available, or may be difficult to acquire. We are therefore providing the opportunity to use data from either the previous academic year (2004/05) or the current academic year (2006/07) if the relevant data is unavailable for 2005/06.

Q1) Please select an academic year from the option box below. All subsequent answers must be relevant to the academic year you select.

Section A: The Number of Cases of Plagiarism

In this section, we are seeking information on the number of cases of plagiarism recorded within your institution during the academic year that you selected in Question One. These numbers should include both cases dealt with by academic misconduct panels (or similar) and cases where penalties were levied without the need for such investigation.

Q2) How many cases of plagiarism were formally recorded in your institution during the academic year selected in Q1?

_____ Unknown

Q3) For each of the following academic levels, please state how many cases of plagiarism were recorded?

Total Undergraduate	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Level 1 (Certificate)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Level 2 (Diploma)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Level 3 (Bachelors)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Total TAUGHT Postgraduate	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A

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Q4) In how many of the total number of cases was it the student's first case of plagiarism and in how many was it a subsequent case?

Total First Offences	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Total Subsequent Offences	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
<i>Second Offences</i>	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
<i>Third Offences</i>	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
<i>Fourth Offences</i>	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A

Section B: Penalties Assigned

This section seeks information on the penalties applied in cases of plagiarism during the academic year selected in Question One. Please note that the penalties listed below represent the full range of penalties available in the sector, not all of them will be available in you institution.

Q5) Which of the following penalties were applied for cases of plagiarism in during the academic year selected in Q1? (Select all that apply)

Informal or verbal warning / reprimand	<input type="checkbox"/>
Formal or written warning / reprimand	<input type="checkbox"/>
Fined	<input type="checkbox"/>
Student resubmitted work (with NO cap on the re-submitted mark)	<input type="checkbox"/>
Marks deducted from the affected assessment, with grade still above a pass	<input type="checkbox"/>
Assessment mark reduced to a bare pass	<input type="checkbox"/>
Student required to re-submit/re-sit the assessment for a maximum mark of a pass	<input type="checkbox"/>
Assessment mark reduced to a fail (e.g. 0%) (with NO possibility of re-submission)	<input type="checkbox"/>
Marks deducted from the affected module, with grade still above a pass	<input type="checkbox"/>
Module mark reduced to a bare pass	<input type="checkbox"/>
Student required to re-submit/re-sit the module for a maximum mark of a pass	<input type="checkbox"/>
Module mark reduced to a fail (e.g. 0%) (with NO possibility of re-sit)	<input type="checkbox"/>
Student suspended	<input type="checkbox"/>
Reduced or capped final degree mark / classification	<input type="checkbox"/>
Student required to re-take the academic year for a maximum mark of a pass	<input type="checkbox"/>
Reduced qualification (i.e. honours degree → ordinary degree / diploma)	<input type="checkbox"/>
Student failed or expelled from programme	<input type="checkbox"/>

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Q6) Please indicate how *many* times these penalties were applied?

Informal or verbal warning / reprimand	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Formal or written warning / reprimand	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Fined	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Student resubmitted work (with NO cap on the re-submitted mark)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Marks deducted from the affected assessment, with grade still above a pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Assessment mark reduced to a bare pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Student required to re-submit/re-sit the assessment for a maximum mark of a pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
assessment mark reduced to a fail (e.g. 0%) (with NO possibility of re-submission)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Marks deducted from the affected module, with grade still above a pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Module mark reduced to a bare pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Student required to re-submit/re-sit the module for a maximum mark of a pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Module mark reduced to a fail (e.g. 0%) (with NO possibility of re-sit)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Student suspended	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Reduced or capped final degree mark / classification	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Student required to re-take the academic year for a maximum mark of a pass	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Reduced qualification (i.e. honours degree → ordinary degree / diploma)	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A
Student failed or expelled from programme	_____	<input type="checkbox"/> Unknown	<input type="checkbox"/> N/A