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Title - The Impact of Anonymous Marking on Students' Perceptions of Fairness, Feedback and Relationships with Lecturers.

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The Impact of Anonymous Marking on Students' Perceptions of Fairness, Feedback and Relationships with Lecturers.

Abstract

Anonymity in marking is a contentious issue within higher education. Conflicting research findings have identified issues surrounding gender bias, ethnicity bias and fairness in marking. However, the effects of anonymity upon feedback mechanisms have not been systematically explored. This study sought to understand the effects of anonymous marking and feedback upon students' perceptions of its potential for future learning and relationship building with their lecturer. First year United Kingdom undergraduate business, politics, pharmacy and french students experienced anonymous and non-anonymous marking of coursework across different modules. Student performance data were collected, and a survey was administered following the completion of their modules. Results revealed that anonymous marking did not seem to advantage or disadvantage particular groups of students in terms of grade outcome. There was no significant difference in perceptions of fairness according to whether or not marking was anonymous. Furthermore, the results suggest that anonymous marking might undermine the learning potential of feedback, and minimise the strength of the relationship between lecturers and students, which may minimise the role of dialogue in the feedback process.

Keywords: Anonymity, Fairness, Feedback Dialogue, Attainment Gap, BME

Introduction

The merits of anonymous marking have been the subject of lively debate within the assessment literature over the past thirty years. Whilst some espouse the practice as a method to minimise gender and ethnicity bias (e.g. Bradley 1984, 1993; Baird, 1998), conclusive empirical support for this position is rather thin on the ground. Whilst anonymous marking is unlikely to eliminate all sources of bias during marking, it can promote students' confidence in the fairness of the

assessment process (Falchikov & Goldfinch, 2000). Indeed, the United Kingdom National Union of Students have suggested that anonymous marking “reduces both the fear and likelihood of discrimination” (NUS, 2008, p.3). The introduction of anonymous marking in many institutions was in part a response to the 2008 NUS ‘mark my words, not my name’ campaign. This campaign reflected findings from a 1999 survey, which reported that “44 per cent of students’ unions believed that discrimination and bias played a part in the way that students’ work was assessed and addressed.” (p.1) The NUS further argue that anonymous marking also protects staff from potential accusations of prejudice; without activating prior knowledge of a student’s past performance, a marker cannot be biased by prejudgements (Fleming, 1999). Critics of anonymous marking have argued that it appears to erode trust in the assessment process and, in particular, depersonalises teaching and undermines the developmental function of feedback (Baty, 2007; Southee, 2009; Price, Handley, Millar & O’Donovan, 2010). The issue of anonymous marking merits closer scrutiny within the context of recent changes to UK higher education funding, the growing diversity of the student body, and an increasing awareness of the importance of dialogic feedback processes (Carless, 2016).

Bias in the Grading of Work

A commonly held value by those working in higher education is that assessment processes should be equitable (Brennan, 2008). Without anonymous marking, Dennis and Newstead (1994) argue that the potential exists for discrimination on grounds of race, age and other personal characteristics. Within a secondary school setting Goddard-Spear (1984) reported that Science markers awarded higher marks if they perceived a blind piece of work to have been written by a male. Similarly, within an early empirical study in a higher education context, Bradley (1984) reported that when less experienced second markers graded work that was not anonymised (without knowledge of the first marker’s mark), the second marker gave higher grades than the first marker to the work of males, whilst the marks given to the work of females

were similar for both the first and second markers. However, such a finding has not been replicated, and other researchers have argued that bias is most likely attributable to a marker's previous knowledge of the student, rather than to broad characteristics such as gender (Dennis and Newstead, 1994). Conversely, no consistent evidence of gender bias in marking has been reported in either Secondary school settings (Baird, 1998) or higher education Settings (Newstead and Dennis, 1990). Indeed, in a more recent study where examination scripts were marked both anonymously and non-anonymously, Owen, Stefaniak and Corrigan (2010) reported no evidence of gender bias in marking.

Regardless of the source of bias, Malouff, Stein, Bothma, Coulter and Emmerton (2014) have argued that the existence of bias in marking can reduce equity, advantaging some groups of students whilst concurrently disadvantaging others. On the basis of findings that the introduction of anonymous marking at the University of Wales increased the number of First Class Degrees awarded to women by 13%, Brennan (2008) concluded that: "knowledge of the identity of the student who authored the piece of written assessment has the potential to create bias in the mind of the examiner" (p. 43). This position aligns closely with recommendations made by Malouff, Emmerton and Schutte (2013), that bias in grading can be minimised where the marker has no knowledge of the students' previous performance, grades, or gender. Nevertheless, others suggest that there is little conclusive evidence that anonymous marking eradicates gender bias (Krawczyk, 2017).

It has been suggested that anonymous marking preserves the integrity of the lecturer and student relationship, protecting both parties from potential sources of bias, ensuring the work is judged on its merits (Worsley & Knight, 1998; Brennan, 2008; Malouff et al., 2013; Malouff et al., 2014). Counter to this conclusion, Dennis (2007) suggested that as long as second marking is conducted by someone who has no previous knowledge of the student, there is no reason why first marking need be anonymous. Owen, et al. (2010) have even gone so far as to

argue that requiring anonymisation of student work is a negative commentary on accepted assessment accuracy within the sector. They suggest that if markers switch to anonymous marking it indicates cynicism with previous marking practices and promotes distrust between lecturers and students (Owen et al., 2010).

Assessment practices have also come under scrutiny in the context of attainment gaps between students of different ethnic groups. A report by the UK higher education Academy (HEA) concluded that:

“Relative to White students, those from every non-White ethnic group are less likely to obtain good degrees and less likely to obtain first class degrees... The odds of an Asian student being awarded a good degree were half of those of a White student being awarded a good degree, whereas the odds of a Black student being awarded a good degree were a third of those of a White student being awarded a good degree.” (Richardson, 2008a, p.10)

This is an extremely complex issue that cannot be attributed solely to marking practices. Arguably, final degree outcomes can be influenced by many factors which are not able to be mitigated entirely by anonymising marking. Indeed, the report's author, Singh (2011), concedes that explanations for the differing attainment levels of Black and Minority Ethnic (BME) and White students are not yet fully understood and warrant further investigation, especially if we are to draw direct relationships between marking practices and attainment outcomes (Osler, 1999). In the UK, the HEA and the Equality Challenge Unit (ECU) (ECU/HEA, 2008) have themselves highlighted the need for more research into students' experiences of marking practices and the resulting impact on attainment. Alongside differences in degree outcomes, BME students also report lower levels of satisfaction with the experience of assessment and feedback when compared to white students. BME students cite perceptions

of unfair assessment and a lack of transparency in marking arrangements as the cause of their dissatisfaction, leading to demands for anonymous marking (Singh, 2011; Surridge, 2008)

Within many higher education institutions, it has long been an accepted practice to mark examination scripts anonymously, however, there is little evidence that such a practice reduces attainment gaps between different groups of students. At one UK higher education institution, Hinton and Higson (2017) analysed 32,000 student records from a 12-year period. The mean performance of students on exams and coursework which were marked anonymously, and on oral presentations which were marked non-anonymously, was scrutinised. Where exam scripts were marked anonymously, the attainment gaps between students of different genders and ethnicities reduced by as little as 0.6 and 1.5 per cent, respectively. Interestingly, for oral presentations which were marked non-anonymously, the gaps in performance between different types of students also narrowed over the same period, which could not be attributed to anonymous assessment. Hinton and Higson (2017) conclusively suggest that anonymous marking has done little to reduce between-group mean performance differences. However, the impact of anonymous marking on the grade awarded to a piece of work is only a small component of the assessment process. A crucial question is whether the practice of anonymous marking influences the nature of the feedback given to the student, and the impact of this feedback on their future learning and development.

The Effect of Anonymous Marking on Feedback

It is important to distinguish between anonymous grading and anonymous feedback; Whitelegg (2002) argues that whilst anonymous grading has clear advantages (such as removal of bias/prejudgement), the provision of feedback on an anonymous basis is potentially problematic. Drawing upon data from focus groups with both staff and students, Whitelegg suggests that anonymous marking disrupts the feedback loop by removing the individualisation

of feedback comments, increasing the distance between staff and students. Arguably, this may reinforce a more monologic feedback paradigm whereby students are merely passive recipients of feedback rather than active engagers with feedback dialogue (Winstone & Pitt, 2017). Such potential negative implications for the student learning experience need to be considered when adopting or reviewing the use of anonymous marking (Birch, Batten and Batey, 2016). This is particularly the case if we are to promote learning through authentic assessment which is transferable to employment after completing higher education. After all, as Brennan (2008) argues, in a professional work context employees are rarely appraised anonymously.

Much assessment feedback in UK higher Education is written and delivered as one-way communication which students often regard as opaque and unusable (Nicol, 2010). Increasingly, the concept of ongoing dialogue between lecturer and student throughout the assessment process has been promoted within the literature (Nicol & Macfarlane-Dick, 2006; Carless, 2016; Ajjawi & Boud, 2017). However, anonymous marking can limit the potential for dialogue within the feedback process for a number of reasons.

Firstly, anonymous marking makes it difficult for lecturers to write individualised feedback for students (Whitelegg, 2002). Second, lecturers like to recognise improvement and progression from one assessment to another but anonymous marking makes this difficult to achieve (Tuck, 2012), and anonymous marking policies may inadvertently discourage the use of formative assessment. In this regard, Orsmond, Merry and Reiling (2005) reported that if drafts of a student's work have been assessed formatively, the anonymous marking process for the summatively assessed submission is perceived to be undermined. Third, research has consistently reported that students prefer personalised, prompt, encouraging feedback that promotes self-regulation and supports future development (Hattie and Timperley, 2007; Handley, Price & Miller, et al, 2008; Tuck, 2012; Birch et al., 2016; Winstone, Nash, Rowntree & Menezes, 2016). However, students are able to recognise the rather depersonalised nature of

feedback on anonymously marked work and thus respond more negatively to such feedback (Whitelegg, 2002; Crook, Gross, and Dymott, 2006).

Research continually attests to the fact that feedback can have a considerable effect upon student emotions (Rowe, Fitness & Wood, et al., 2013; Pitt & Norton, 2016; Pitt, 2017). Objective, depersonalised feedback therefore fosters feelings of not belonging and detachment from the learning situation (Pitt, 2017). This is particularly the case for non-traditional and mature students who report that anonymous marking makes them feel unwelcomed and not nurtured (Young, 2000). This issue seems especially prevalent given the recent desire by the UK government to increase the numbers of widening participation students within higher education. Pitt (2017) has argued that for lower achieving students, feedback is a troublesome area, particularly when it is given at the end of the assessment process with no opportunity to act upon it. Therefore, feedback which is generic, emotionally neutral and not personalised to a particular student's needs may not have the desired effect of promoting future use (Birch et al., 2016; Pitt & Norton, 2016). This outcome runs counter to an increasing focus within the literature on student engagement with and implementation of feedback (e.g. Jonsson, 2013; Nash & Winstone, 2017; Price et al., 2010; Winstone, Nash, Parker & Rowntree, 2017; Winstone, Nash, Rowntree & Parker, 2017).

Implicit within the framework surrounding anonymously marked work is an onus upon students to come and discuss the feedback with the marker. It is here that potentially lecturers may be able to mitigate the effects of depersonalised feedback (Whitelegg, 2002, Birch et al., 2016). However, such a practice would arguably serve to increase workload and create a pressure situation for students who struggle with one-to-one situations following a poor outcome (Owen et al., 2010; Pitt, 2017). Whitelegg (2002) suggested that students may actively disengage from the process and not speak to the marker about the feedback. It is for this reason

that the feedback loop may be disrupted to the point where feedback is not understood, acted upon or utilised.

Very little work currently exists exploring gender and ethnic differences in the nature of feedback comments given. If evidence were to suggest that knowing the gender or ethnicity of a student led a marker to provide different feedback, either in terms of quantity, quality or focus, then this might support calls for anonymous marking practices. To this end, Birch, et al. (2016) investigated the effect that perceived student gender had on the nature of feedback comments given to the student. They found there were no gender differences in the content or number of comments made on the students' work. In this regard, it appears that markers were marking and generating feedback comments based solely on the content of the work.

The Present Study

In light of conflicting findings regarding gender bias, ethnicity bias and fairness in marking, the first aim of the present study was to explore whether students perceive anonymous marking as fairer than non-anonymous marking, and whether perceptions of fairness differ according to student gender and ethnicity. In line with this aim, we also wished to test for statistical differences between student marks for anonymously and non-anonymously marked work. The second aim of the present study was to look beyond perceptions of fairness to consider whether students perceive non-anonymous marking as fostering a stronger relationship with their lecturer than anonymous marking, and whether feedback on non-anonymously marked work is perceived as more helpful to learning than feedback from anonymously marked work.

Method

Participants

Across four first year UK undergraduate subjects, 442 students experienced one module where coursework was marked anonymously and three modules where it was marked non-anonymously. A survey was distributed to all students and 195 responded (Male $n = 98$, $M_{age} = 19.48$, $SD = 2.69$; Female $n = 97$, $M_{age} = 19.16$, $SD = 1.14$). The students were self-categorised as White ($m=54$, $f=48$), Black ($m=27$, $f=35$) and Asian ($m=17$, $f=14$). Four disciplines were represented: Business ($n=87$); Politics ($n=60$); Pharmacy ($n=40$); and French ($n=8$).

Design and Procedure

Each student experienced both anonymous and non-anonymous marking of summative assessments within their programme of study during one semester. Each student experienced one semester-long module where one piece of summative coursework was anonymously marked and feedback given, and three other semester-long modules where coursework was not marked anonymously. The University where this research took place was keen to explore the impact of anonymous marking on a small scale and therefore the researchers were permitted to only modify the coursework marking for one of the student's four modules. The assessments in all four modules were discussed in advanced with students. All students were given briefings relating to assessment criteria and analytic marking rubrics that would be used by markers. The criteria and marking rubrics were available in module handbooks and the VLE. Prior to commencement of the semester students were told in which of the four modules they were studying they would be assessed anonymously, and that they would be asked to complete a survey relating to their experiences of marking in all modules at the end of the semester.

Ethical approval was granted for both the distribution of the survey, as well as accessing performance data for work marked both anonymously and non-anonymously.

Performance Data

Marks awarded for coursework that had been anonymously and non-anonymously marked were made available by the central University data team for 325 of the 442 students in the study.

The Survey

The survey was administered in the final teaching session of the module where the coursework had been marked anonymously to ensure that students were aware of which module they experienced anonymous marking in. Students were asked to complete the survey relating to their experiences of both anonymised and non-anonymised marking and feedback. The timing of the survey varied between one and two weeks after students had received their marks and feedback from the coursework in all modules used in this study. The survey questions were derived from the findings of previous literature relating to anonymous marking and feedback, alongside questions relating to assessment and feedback aligned with items from the NSS (see online supplementary materials). Students indicated their agreement with statements on a scale from 1 (strongly disagree) to 5 (strongly agree).

Students were asked to consider their experiences of both anonymous and non-anonymous marking, by rating their perceptions of the marking process, (bias, fairness, transparency and confidence in the process; 5 items), perceptions of feedback (content, future use, clarifying gaps in knowledge, use in the next assessment, subsequent assessment behaviours; 5 items) and perceptions of relationships (learning progress recognition, relationship with lecturer, effort recognition; 3 items). The survey also collected basic demographic information.

Data Analysis

Both performance data and survey data were screened and found to meet parametric assumptions. Thus, statistical analysis of the performance data and survey data utilised mixed

ANOVA models, in order for gender and ethnicity to be included as between-subjects variables alongside the within-subjects factor of anonymity.

Results

Performance Data

For all students, one piece of coursework was anonymously marked, and up to three pieces of coursework were marked non-anonymously. Thus, we compared marks obtained on the one piece of anonymously marked coursework with the average mark of the pieces of coursework that were marked non-anonymously (see Table 1).

Having confirmed that the data met parametric assumptions, student performance data were analysed using a 2 (Anonymity; anonymous and non-anonymous) x 2 (Gender) x 3 (Ethnicity) Mixed ANOVA with Anonymity as the repeated measure. Students' performance did not differ significantly across coursework that was marked anonymously and non-anonymously ($F(1, 319) = .40, p = .49, \eta^2_p = .002$). Crucially, none of the interactions including the factor of Anonymity were statistically significant (all p s $> .05$); thus, anonymous marking did not seem to advantage or disadvantage particular groups of students. The only other significant effect was the main effect of ethnicity ($F(2, 319) = 5.13, p = .006, \eta^2_p = .03$); regardless of whether work was marked anonymously or non-anonymously, white students ($M = 62.81, SD = 8.43$) obtained higher grades than black students ($M = 59.81, SD = 7.70$) ($p = .006, d = 0.36$).

Survey Data

Composite scores for each of the three dimensions of the survey were calculated, and all dimensions had good internal consistency (see Table 2 for reliability coefficients and descriptive statistics). All dependent variables were screened and found to meet parametric assumptions.

Perceptions of Fairness in Marking

The first analysis tested whether anonymous marking was perceived by students to be fairer than non-anonymous marking. A 2 (Anonymity: Anonymous; Not Anonymous) x 2 (Gender) x 3 (Ethnicity) mixed ANOVA was conducted, with anonymity as the repeated measure, and perceived fairness in marking as the dependant variable.

The data show no significant difference in perceptions of fairness according to whether or not marking was anonymous ($F(1, 189) = 3.09, p = .08, \eta^2_p = .02$); there were also no significant gender or ethnicity differences in the perceived fairness of marking ($F(1, 189) = .57, p = .45, \eta^2_p = .003$, and $F(2, 189) = 1.46, p = .24, \eta^2_p = .02$, respectively). There was, however, a significant interaction between Anonymity and Gender, $F(1, 189) = 4.02, p = .046, \eta^2_p = .02$. Simple Main Effects Analyses revealed that whilst for males there was no difference in the perceived fairness of anonymous and non-anonymous marking ($t(97) = -.95, p = .35, d = 0.09$), females perceived anonymous marking to be significantly fairer than non-anonymous marking, $t(96) = 3.63, p < .001, d = 0.37$. Neither the Anonymity x Ethnicity interaction, nor the three-way interaction, were significant ($ps > .05$).

Perceptions of Feedback

In order to test whether feedback from non-anonymous marking is perceived to be more helpful to students' learning than feedback from anonymous marking, a 2 (Anonymity: Anonymous; Not Anonymous) x 2 (Gender) x 3 (Ethnicity) mixed ANOVA was conducted, with anonymity as the repeated measure, and perceptions of feedback as the dependant variable.

Feedback on non-anonymously marked work was perceived by students to have greater potential for learning than feedback on anonymously marked work, $F(1, 189) = 15.15, p < .001, \eta^2_p = .07$. There were no significant effects of gender ($F(1, 189) = 1.95, p = .17, \eta^2_p = .01$) nor

ethnicity ($F(2, 189) = 1.35, p = .26, \eta^2_p = .01$) on the perceived learning value of feedback. There were no significant two- or three-way interactions (all $ps > .05$).

Perceptions of Relationships

Finally, we tested whether students perceived non-anonymous marking to foster a stronger relationship with their lecturer than anonymous marking. A 2 (Anonymity: Anonymous; Not Anonymous) x 2 (Gender) x 3 (Ethnicity) mixed ANOVA was conducted, with anonymity as the repeated measure, and perceptions of relationships as the dependant variable.

In parallel to the findings for perceptions of feedback, there was a significant main effect of anonymity, $F(1, 188) = 26.32, p < .001, \eta^2_p = .12$. Students perceived a stronger relationship with the marker where work had not been marked anonymously, than when it had been marked anonymously. Neither the main effect of gender ($F(1, 188) = 2.95, p = .09, \eta^2_p = .02$), nor the main effect of ethnicity ($F(2, 188) = 2.73, p = .07, \eta^2_p = .03$) were significant. There were no significant two- or three-way interactions (all $ps > .05$).

Discussion

The primary aim of the present study was to explore students' experiences of anonymous marking, recognising that the impact of anonymous grading and anonymous feedback may differ (Whitelegg, 2002). At a time where dialogic feedback practices are gaining increasing recognition (e.g., Carless, 2016), it is important to ascertain whether the perceived benefits of anonymous marking (e.g. removal of bias) outweigh potential disadvantages, such as disruption of feedback learning loops and exacerbating the perceived distance between lecturers and students.

Perceptions of Anonymous Grading

One of the primary arguments for the use of anonymous marking is that it ensures students' work is marked purely on merit, without the potential for knowledge of the student to influence the grade awarded (e.g. Dennis & Newstead, 1994). We explored whether we could see systematic differences in students' grades for work that had been marked anonymously, compared with work that had been marked non-anonymously. The student performance data obtained for the sample of students who experienced both forms of marking showed no statistical difference between students' marks for both anonymously and non-anonymously marked work. Such a finding aligns with more recent suggestions that pre-existing knowledge of the student's identity does little to systematically influence grading of work (Krawczyk, 2017). In terms of student ethnicity and student performance data, this study supports Hinton and Higson's (2017) assertion that anonymising student work does little to address already well-documented attainment gaps. We did not find any evidence that students are either advantaged or disadvantaged by anonymous marking or non-anonymous marking.

Whilst students' performance did not differ objectively according to whether their work was marked anonymously or non-anonymously, on a subjective level did students perceive anonymous marking to be fairer than non-anonymous marking? Taking the sample as a whole, the answer is negative; there was no significant difference in students' ratings of the perceived fairness of marking for anonymously and non-anonymously marked work. However, female students did perceive anonymous marking to be significantly fairer than non-anonymous marking, yet our analysis of performance data demonstrated that these concerns about the fairness of marking were not founded. As such, our findings do not provide support for biased marking when the identity of the student is known (Worsley & Knight, 1998; Brennan, 2008; Malouff, Emmerton & Schutte, 2013); rather, they align with those of Owen et al. (2010) in failing to demonstrate significant gender bias in marking. We also found no evidence of perceived bias on the grounds of ethnicity, and neither Black nor Asian students reported that

they perceived non-anonymous marking to be unfair or lacking in transparency in comparison to anonymous marking.

As one way to address students' concerns about potential bias in non-anonymous marking, our findings reinforce the need for open, transparent communication with students in relation to marking practices, moderation, second marking and the role of the external examiner. Such communication would address the potential for distrust between lecturers and students at the beginning of a programme of study and create a positive dialogue surrounding fairness in marking.

Perceptions of Anonymous Feedback

The students in this study indicated that feedback on non-anonymously marked work was perceived as more helpful to learning than feedback from anonymously marked work. The negative effect of anonymisation in marking has previously been reported in the literature in relation to a disruption to the feedback loop, depersonalisation of feedback comments and a lack of student engagement in feedback seeking (Whitelegg, 2002; Brennan, 2008). In this study, students were able to compare their experience of both anonymous and non-anonymous marking and associated feedback; they reported that feedback received on the anonymously-marked work was not as effective in helping them to improve learning and study practices, in clarifying things they had not fully understood, in initiating further feedback seeking, nor in motivating them to do better next time. A large body of literature attests to the fact that students prefer personalised feedback (Handley et al., 2008; Tuck, 2012; Birch et al., 2016). The feedback received on the anonymously marked work could not reference students' previous performance, their use of feedback from previous assessments or be emotionally sensitive to that particular student. Previous research has shown that lecturers like to recognise improvement and progression from one assessment to another (e.g. Tuck, 2012). As such, this

could have led to the perception that feedback on anonymously marked work was not as effective for their learning (Whitelegg, 2002; Crook, et al., 2006). Crucially, feedback which is generic, emotionally neutral, and not personalised to a particular student's needs may not support implementation of the developmental advice (Birch et al., 2016; Pitt & Norton, 2016).

The students in this study perceived that non-anonymous marking fosters a stronger relationship with their lecturer than is possible with anonymous marking. Such a finding aligns with those of Price et al. (2010) where the feedback on non-anonymous work was perceived as more relational, enhancing the students' internal well-being and positive mind-set. The distance between the lecturer and student was therefore perceived to be reduced by the feedback on the non-anonymously marked work (Whitelegg, 2002; Handley et al., 2008, Hughes, 2011). Our data align with the recommendations made by Birch et al. (2016), that anonymous marking may undermine the potential for feedback to foster positive relationships between lecturers and students. Depersonalisation of the feedback process by limiting the potential for feedback dialogue could be argued to represent a regressive move in feedback practice, particularly if we are to consider the role that student's emotions have upon their feedback processing (Rowe et al., 2013, Pitt & Norton, 2016; Pitt, 2017). The students in this study perceived that receiving feedback on non-anonymously marked work was a more positive experience than receiving feedback on work that had been marked anonymously. Therefore, we suggest that if we are to follow the most recent recommendations surrounding dialogic feedback we should focus upon increasing the propensity for this working relationship to be fostered within feedback situations (Carless, 2016).

Conclusion

The findings within this study have certain limitations we must acknowledge. Firstly, it was carried out at a single UK higher education Institution and represented only four subject areas.

Secondly, whilst the student performance data were drawn from all students with available data who took the modules in the study, not all of these students also completed the survey. The students whose performance data were analysed, but did not complete the survey, may have viewed anonymous marking and feedback differently. This study focused upon exploring the characteristics of students (gender and ethnicity) and perceptions of anonymous marking; however, future research could investigate the characteristics of markers to explore if this has a bearing upon marking practice and perceptions of fairness for both anonymous and non-anonymous marking. In addition, future research could also explore student's perceptions of assessment fairness within each individual module and each different type of assessment they experience. A potential future research direction could also consider how the depersonalised feedback students received from the anonymous marking manifested itself and what they subsequently did with it. Limitations aside, the implications of the findings are of value for both research and practice.

Quality assurance, transparency and equity in assessment remain key concerns of practitioners and policy makers in higher education. However, if we view the primary purpose of assessment as a process of learning, then we need to seriously question whether transparency and equity require anonymous marking. Whitelegg (2002) recognised the potential detrimental effects of anonymous marking on the impact of feedback, and recommended that work should be anonymously graded, but then unmasked before providing feedback so that comments could be personalised. Our data suggest that anonymous marking might undermine the learning potential of feedback, and minimise the strength of the relationship between lecturers and students, which may minimise the role of dialogue in the feedback process.

We also found no evidence that non-anonymous marking has any deleterious effect on students' performance, nor that students perceive it to be unfair or biased (with the exception of female students). In line with a recent emphasis on student engagement with feedback for

learning (e.g. Winstone et al., 2017), and the crucial role of dialogue in the feedback process (e.g. Carless, 2016), we therefore suggest that feedback might not be most effective if provided on an anonymous basis. There is clearly a trade-off to be made between enhancing students' belief in the learning potential of feedback on one hand, and ensuring perceptions of fairness and transparency on the other. However, anonymous marking is not the only means by which the latter aim can be achieved. Making assessment processes transparent to students through continued dialogue, maintaining trust in the professionalism of academics, and promoting feedback as an ongoing process of dialogue can maintain the integrity of assessment processes without sacrificing the potential impact of feedback on students' learning and development.

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Table 1. Student performance (M, SD) on anonymously and non-anonymously marked coursework, by gender and ethnicity.

		Anonymously marked coursework		Non-anonymously marked coursework	
		N	M (SD)	N	M (SD)
Male	Asian	24	62.42 (11.42)	24	60.75 (8.48)
	Black	40	58.88 (10.24)	40	59.34 (8.12)
	White	120	61.40 (11.15)	117	62.34 (8.49)
Female	Asian	26	59.88 (13.09)	26	61.76 (8.79)
	Black	44	59.95 (11.47)	44	60.95 (7.72)
	White	77	64.66 (9.21)	74	64.57 (7.60)

Table 2. Mean (SD) ratings of the three dimensions of anonymised and non-anonymised feedback.

Assessment Format	Domain	α	Ethnicity & Gender					
			White		Black		Asian	
			Male N = 54	Female N = 48	Male N = 27	Female N = 35	Male N = 17	Female N = 14
Anonymous	Fairness	.86	3.24 (.68)	3.87 (.66)	3.13 (.86)	3.55 (.90)	3.74 (.90)	3.50 (.89)
	Feedback & Learning	.77	3.16 (.58)	3.46 (.64)	3.06 (.70)	3.22 (.54)	3.36 (.61)	3.29 (.96)
	Relationships	.72	3.02 (.74)	3.29 (.59)	2.68 (.68)	3.08 (.77)	3.14 (.66)	3.00 (.90)
Not anonymous	Fairness	.85	3.46 (.65)	3.03 (.72)	3.50 (.88)	3.22 (.91)	3.25 (.94)	3.36 (.79)
	Feedback and Learning	.73	3.53 (.50)	3.58 (.55)	3.56 (.71)	3.45 (.49)	3.36 (.51)	3.63 (.63)
	Relationships	.67	3.33 (.78)	3.52 (.71)	3.51 (.76)	3.33 (.72)	3.51 (.61)	3.74 (.53)

Online supplementary materials

Questionnaire on Student Experiences of Anonymously Marked Coursework

The University is exploring anonymous marking. You have taken part in a pilot where some of your coursework has been anonymously marked. This questionnaire is your opportunity to tell us what you think about both anonymous marking and non-anonymous marking. Your responses will be aggregated with others to help the university in setting future marking policies. Your participation is voluntary, your responses to this survey are anonymous. It is not compulsory for you to complete the questionnaire.

The first set of questions below relate to your experiences of coursework that was anonymously marked. The second set of questions relate to your experiences of coursework that was not anonymously marked (i.e. personally identifiable). Please read each question and circle your response in the scale provided.

Anonymously marked work	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I prefer my coursework to be marked anonymously.	1	2	3	4	5
2. I am more confident in the marking process if my coursework is marked anonymously.	1	2	3	4	5
3. The feedback I received on my anonymously marked coursework motivated me to do better next time.	1	2	3	4	5
4. Anonymous marking makes the marking process fair and transparent.	1	2	3	4	5
5. I am confident that my coursework is marked solely on its academic merit.	1	2	3	4	5
6. The feedback I received on my anonymously marked coursework made me feel my effort had been recognised.	1	2	3	4	5
7. I was satisfied with the content of the feedback I received on my anonymously marked coursework.	1	2	3	4	5
8. The feedback I received on my anonymously marked coursework enhanced my relationship with my lecturer.	1	2	3	4	5
9. The feedback given on my anonymously marked coursework helped me to improve how I study and learn.	1	2	3	4	5
10. The feedback given on my anonymously marked coursework helped to clarify things I hadn't fully understood.	1	2	3	4	5

11. Following the anonymous marking of my coursework, I actively sought feedback and support from the marker.	1	2	3	4	5
12. Anonymous marking removes bias in the marking of my coursework.	1	2	3	4	5
13. The feedback I received on my anonymously marked coursework made me feel my lecturer cared about my progress.	1	2	3	4	5

Personally identifiable marked work (i.e. coursework with your name on it)	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
14. I prefer that the marker knows it's my coursework when he or she is marking it.	1	2	3	4	5
15. I am more confident in the marking process if the marker knows it's my coursework.	1	2	3	4	5
16. The feedback I received on my coursework motivated me to do better next time.	1	2	3	4	5
17. The marking process is fair and transparent when my name is on my coursework.	1	2	3	4	5
18. I am confident that my personally identifiable coursework is marked solely on its academic merit.	1	2	3	4	5
19. The feedback I received on coursework with my name on it made me feel my effort had been recognised.	1	2	3	4	5
20. I was satisfied with the content of the feedback I received on my personally identifiable coursework.	1	2	3	4	5
21. The feedback I received on coursework with my name on it enhanced my relationship with my lecturer.	1	2	3	4	5
22. The feedback given on my coursework helped me to improve how I study and learn.	1	2	3	4	5
23. The feedback given on coursework with my name on it helped to clarify things I hadn't fully understood.	1	2	3	4	5
24. Following the marking of my personally identifiable coursework I actively sought feedback and support from the marker.	1	2	3	4	5

25. I am not concerned about bias in the marking of my personally identifiable coursework.	1	2	3	4	5
26. The feedback I received on coursework with my name on it made me feel my lecturer cared about my progress.	1	2	3	4	5

The University is currently considering the pros and cons of anonymous marking for coursework. You have experienced both anonymised and non-anonymised (personally identifiable) marking this year. Which do you prefer and why?

Age: _____ Gender: _____ Ethnicity: _____ First in Family at University: Y / N

Qualifications & Grades on Entry to University: _____

ILP: Y/N

Thank you for taking the time to complete this questionnaire