ASSESSING THE VALUE OF A HOLISTIC USE OF TURNITIN TO PROMOTE ACADEMIC INTEGRITY

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Abstract: This paper presents provisional findings of research evaluating Turnitin's use at a UK research intensive university. Its findings will inform institutional policy and practice and should also offer others an example of how the software can be used within their own contexts. The paper outlines staff use of Turnitin across the institution, reporting on an online survey, together with follow-up interviews. Findings indicate a divergence between departmental clusters in their use of Turnitin. Some clusters primarily use Turnitin to confirm and substantiate misconduct, in line with a motivation of detecting plagiarism, and another cluster uses Turnitin more formatively with students to discuss academic integrity and writing skills. Connected with these findings are results looking at why departments do not use Turnitin, and whether those that do offer students departmentally-based training in using the software formatively. The type of training staff received was found to have a positive impact on confidence with technical aspects of the software, and beliefs as to its impact on student awareness of plagiarism and quality of writing. Overall, this paper will contribute to the debate about the value of such tools within holistic academic skills and integrity processes.

Introduction

In recent years, many universities have become increasingly concerned to ensure the academic integrity of their students' work. At the University of York, this is achieved through a holistic approach involving staff and student bodies, in increased vigilance in assessment and marking, the investigation of cases of misconduct, educating students about the University's expectations and developing their core academic skills. Such a holistic approach has been widely advocated (Carroll and Appleton, 2001; Morris, 2010; Morris with Carroll, 2011; Sutherland-Smith, 2008). York is a research intensive institution of 15,000 students, 23% of whom are postgraduate and 24% are international students (University of York, 2012). Departments have considerable management autonomy, which brings challenges when seeking to communicate information, implement policy, and ensure a consistent understanding and application of key principles such as academic integrity. The Learning Enhancement Team (LET) works centrally to increase staff and students' understanding of academic integrity. The text-matching software Turnitin has been a part of this holistic approach since 2009, with an emphasis on formative learning and students' responsibility for their work, as well as more disciplinary applications of the program.

   This paper introduces an impact evaluation of the University's deployment of Turnitin, discussing preliminary findings from an ongoing study. It first elaborates on the institutional context and explains how Turnitin is used. Second, it outlines the methods used which include staff surveys and interviews. These have captured how and why Turnitin is used and why it might not be used, perceptions of its purpose and effect on academic integrity, students' writing, and on staff working practices. Results will then be presented and emerging key themes discussed. These themes

include the need for well-publicised information about how Turnitin can be used, the need for appropriate user training and for Turnitin to be efficiently integrated into the assessment, marking and feedback systems. The paper concludes by outlining how the evaluation will be completed and the findings utilised to ensure the University most efficiently and effectively uses Turnitin within its holistic culture of academic integrity.

The institutional context

In common with many UK universities, York has recently been expanding and diversifying its student body to include students potentially less familiar with UK higher education. This has created a need to explain academic writing practices clearly. Together with other academic integrity resources, all students have been given access to Turnitin to promote effective source use and to develop their writing skills. To situate the findings of this study, we first present the institutional context.

The University is divided into 30 autonomous departments, each with a direct relationship with senior management, and no intermediate faculty structure (University of York 2013). In this paper, departments have been grouped into the three cluster types: Arts and Humanities (Arts), Social Sciences, and Sciences. Within each cluster, individual departments vary in size, the ratios of undergraduates to postgraduates, and student demographics (University of York, 2012). In 2008/09, the University purchased a Turnitin licence for originality checking, with a focus on using the tool formatively with students to complement their reading, source use and writing skills (Wiggins 2010). Since 2009, the LET has delivered training workshops for students, which introduce the purpose of Turnitin, instruct them on using it through a Virtual Learning Environment (Blackboard) and to interpret originality reports. The workshops aim to enable students to assess the integrity of their work, and to give them an opportunity to redraft and submit assignments meeting University requirements.

Two types of workshops are offered: departmental workshops for year groups/ whole cohorts, and central inter-departmental open workshops. Both are organised centrally by the LET, and delivered by its staff and a team of "postgraduates who teach" (PGWT). Various authors have proffered the need for such active, participatory training to crystallise for students the concept of plagiarism and to develop confidence using Turnitin (Dahl, 2007; McCarthy and Rogerson, 2009; Rolfe, 2011). Our approach to student training, however, contrasts with smaller-scale, individual faculty-led or academic-led formative models used elsewhere (Badge and Scott 2009; Hunter 2012; Rolfe 2011; Starr and Graham-Matheson 2011). There is no University-wide policy governing the use of Turnitin, instead departments decide whether to organise workshops, with the LET working closely with departments to meet any particular needs.

The varied departmental cultures and autonomy has led to considerable differences in the use of and attitudes towards Turnitin. Individual academics use Turnitin in different ways, with the decision whether to use it to assess originality sometimes left to individual academic judgement. There are no formal reporting procedures as to its use, in what way and for what purpose. This has implications when supporting users, who might not know what help is available, but also from the University's point of view in ensuring Turnitin is used appropriately and transparently. As institutional experience

of using Turnitin grows, it is pertinent to explore how staff and students use it, why and with what perceived impact.

Empirical Methods

The study began in Autumn 2012 with staff-focussed research. An online survey was devised using Google Forms (Google, n.d.). Adapted from Starr and Graham-Matheson's (2011) survey, it asked staff, including PGWT, about themselves, their personal knowledge of Turnitin, their use of it, their knowledge of its use by colleagues and their perceptions of its impact on working practice, student behaviour and learning. A pilot was undertaken with a small group of colleagues that had previously spoken to the LET about Turnitin. Based on the pilot responses, small changes were made to the survey.

Members of staff were asked to indicate their willingness to take part in an interview to discuss their perspectives and experiences. From those willing to be interviewed, a representative sample was contacted based on cluster and their reported use or non-use of Turnitin. Staff were interviewed using a semi-structured format, following a topic guide relevant to their use of Turnitin. The aim was to add detail to the survey data, and to explore related issues around holistic approaches to promoting academic integrity, detecting and investigating misconduct and the use of text-matching tools generally.

The second part of the research, not reported in this paper, has been a similar survey of students. The next stages of the study will involve follow-up interviews with students and an assessment of the institutional database of Turnitin originality reports. We plan to examine assignments students upload when drafting work, how often they submit drafts of the same assignment, what matches Turnitin reports highlight and how students appear to revise work in light of these matches.

Research Results

This section summarises key findings from the staff survey and incorporates data from the 19 interviews (17 academics and two in support/ administrative roles). In total, 130 staff completed the survey: 90 Academics, 22 in administration or support roles and 18 PGWT. Figure 1 illustrates the academic clusters of participants' departments, showing that 40 respondents currently use Turnitin, 23 have used it previously but do not currently, and 67 have never used it as a member of staff. It also separates staff into their subject clusters: 33 from the Arts, 49 from Social Sciences and 48 from Sciences. The following discussion of results considers these patterns of use in conjunction with Tables 1 and 2, which respectively present why and how current users reported they used Turnitin, and Table 3 which asked non-users and non-current users why they did not use it.

The first theme that emerged is a split between using Turnitin as a plagiarism detection tool and as a formative tool. Table 1 shows greater use in the Social Sciences and Sciences to detect plagiarism than in the Arts where use to help students understand what plagiarism is and to improve their writing predominated. This difference between clusters is also echoed in Table 2, which shows the Arts using Turnitin as a developmental tool and colleagues in the other clusters employing it to confirm and
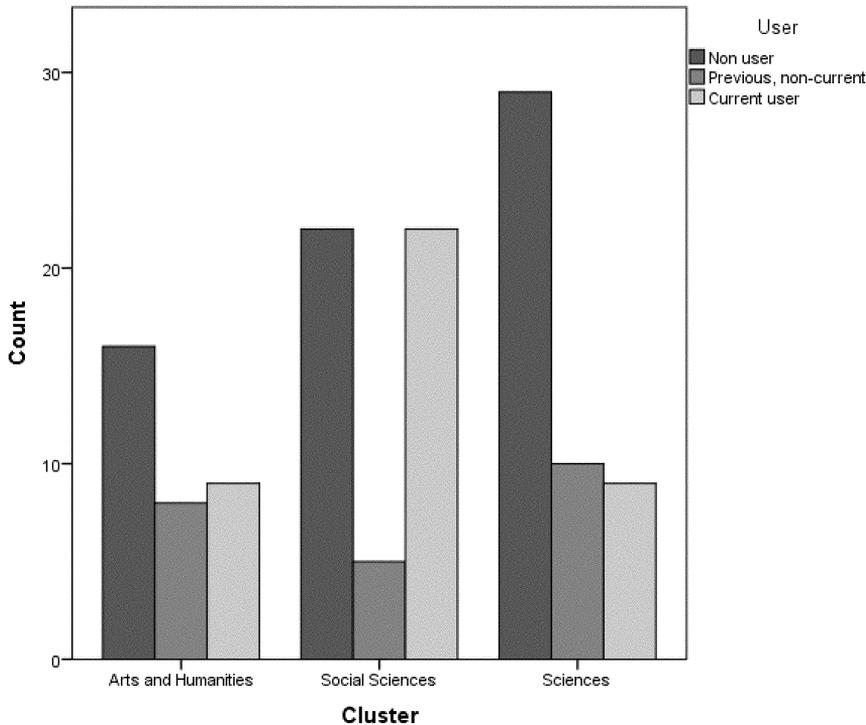
Figure 1. Respondents by academic cluster and reported use of Turnitin (*n* = 130)

substantiate misconduct, in line with their key motivation of detecting plagiarism. The distinctions were evident in the interviews, but they also suggest greater complexity:

> So we use Turnitin only when we suspect something is plagiarised, so we don't put everything through Turnitin. There are some cases, there's one module in particular which uses it as a formative tool, so students are asked to submit their work through Turnitin as a formative exercise and feedback is then provided based on that Turnitin report. (Participant 3, Social Sciences).

> To improve academic writing right from the start, as early as possible, and because these first [Masters] essays they're pretty hard to read. Not all of them, but usually they are... And of course it's just simple plagiarism detection. And possibly compiling the evidence in a very effective efficient way. (Participant 7, Science).

In terms of non-users and previous non-current users, we felt it useful to establish why Turnitin is not employed. It was speculated that this might be due to perceived weaknesses in the software or lack of knowledge of its application, in line with the above distinction between formative and detective uses. Responses to the listed options in the survey, and others that participants volunteered, are in Table 3.

In Table 3, the most cited reason for not using Turnitin was that "assessments in my modules do not necessitate using Turnitin", 34% overall, with this being particularly

Table 1

Why "current users" used Turnitin

	Arts and Humanities *n* = 9	Social Sciences *n* = 22	Sciences *n* = 9	Total *n* = 40
To detect plagiarism	22%	82%	78%	68%
To help students understand what plagiarism is and how to avoid it	67%	36%	33%	43%
To deter students from plagiarising	33%	41%	44%	40%
To encourage/help students to improve their academic writing skills	56%	27%	33%	35%

NB: In this (and subsequent) tables participants could give select multiple responses, so percentages may sum over 100%.

Table 2

How "current users" report using Turnitin

	Arts and Humanities *n* = 9	Social Sciences *n* = 22	Sciences *n* = 9	Total *n* = 40
I used Turnitin to check the originality only of work I suspected of containing unacknowledged source material	22%	68%	44%	53%
I used Turnitin formatively with students to discuss academic integrity and writing skills	67%	27%	22%	35%
I used Turnitin to check the originality of ALL my students' assignments	0%	23%	22%	18%
I gave students the opportunity to view the originality report for their final submission	0%	14%	11%	10%

given by Science participants (41%), whose colleagues we previously noted were using the software for detection purposes. However, another highly selected option was "I do not know enough about how Turnitin can be used to assess originality" (26% overall) with a further 7% indicating they did not know enough generally about what Turnitin is and how staff can use it. Such points were expanded upon when interviewing staff:

> The problem is it's a thing that's going to take more of my time, or so I perceive it. And I don't have that much time… I don't perhaps understand, I mean, having talked to my colleagues I think probably I do need to go and try it out for myself, and get a clearer idea, I've always intended to do that, it has just not been high enough up my list of priorities. (Participant 4, Arts).

> These [tasks] are not in English, these tend to be formatting texts if they're typing things up: mathematics, computer programs… For summative assessments, at the moment they are entirely in an examination hall with a pen and paper . . . Because for most of us,

Table 3

Reasons why participants did not currently use Turnitin

	Arts and Humanities	Social Sciences	Sciences	Total
	n = 24	*n* = 27	*n* = 39	*n* = 90
Assessments in my modules do not necessitate using Turnitin	38%	22%	41%	34%
I do not know enough about how Turnitin can be used to assess originality	13%	30%	31%	26%
I am happy with the existing strategies and tools I use to identify plagiarism (eg. Google searches, SafeAssign, changes in writing style)	8%	15%	18%	14%
Other reasons	13%	15%	5%	10%
It is not part of my role	13%	7%	5%	8%
I lack awareness about Turnitin overall	4%	4%	10%	7%
My department has agreed not to use Turnitin	4%	0%	8%	4%
I do not have electronic copies of assignments	0%	4%	5%	3%
I view Turnitin as ineffective in detecting misconduct	0%	4%	5%	3%

we're not asking students to write English, or natural language, the only place where it really happens is in the ISM [Independent Study Module]. (Participant 6, Science).

The individual respondents' reported use, non-use and explanations thereof were compared with their responses indicating if they knew who else in their department uses Turnitin. Results indicated that many participants were unaware of use (or lack of) in their department: 85% of Arts, 51% of Social Sciences, and 54% of Science. However, this is not the case for every department, as the survey and interviews identified departments where use, and reports on colleagues' use was reported as known. In the interviews this appeared to relate to the administrative roles several participants undertook. The quotes below highlight typical levels of awareness from Turnitin users and non-users:

We had a discussion about this at Board of Studies at the start of this year . . . a fairly lengthy discussion that one of our experimental officers did a presentation on it to bring a lot of the staff up to speed with what we do and why we do it, really, and to, I think really, to raise awareness of it, to see if there's more we could do in the future, to remind people that it is there on the VLE, that they can use it if they want to. (Participant 15, Arts).

I'm not the best attender at Board of Studies I'm afraid . . . I will attend Graduate School Board, and we have had discussions about Turnitin, but I'm not really, I can't remember them sorry. I can't remember. I mean, are we supposed to be using it yet? Are we all supposed to be using it now? (Participant 10, Social Science).

Table 4

Perceived knowledge of how Turnitin is used within respondents' departments

	Arts and Humanities	Social Sciences	Sciences	Total
	n = 4	*n* = 24	*n* = 21	*n* = 49
To check work that, on marking, has raised suspicions of academic misconduct	50%	63%	24%	45%
To check assignments on individual programmes/ modules only	0%	17%	43%	27%
To strengthen the evidence in an academic misconduct case	25%	33%	24%	29%
I do not know specifically, but I know colleagues do use it	25%	13%	29%	20%
To routinely check ALL assignments students submit for possible academic misconduct	0%	21%	5%	20%
Other	25%	8%	5%	8%

Staff usually reported that their department's use was similar to their personal use (see Table 4). 45% of staff indicated that Turnitin is used after initial marking, rather than being an integral part of the marking process, with the majority of the Social Science respondents selecting this option (63%). Such participants are using Turnitin to check any concerns, possibly providing evidence for a misconduct case, after first using their academic judgement and their ability to first spot potential plagiarism. Table 4 also shows that, in the Sciences, Turnitin is used more on individual assignments than a widespread basis. However, as with other results we have reported, our data illustrate different marking practices, several staff routinely check the similarity index summary view before marking to see if any assignments stand out as potentially problematic:

> I look for similarity . . . I start by looking at what sort of percentages we are talking about. Let's have a look at say, this one, 68%. Why have we got such a big similarity? (Participant I13, Social Science).

> When I'm marking their work, that's when I normally run across Turnitin and it's usually when it's applied to larger essays, so the third year essays and the placement . . . essays that the students write, those are the things that are normally passed through Turnitin and are then handed off to us as markers, as part of the packet of the student work. (Participant I17, Science).

It was also reported that some departments' assessment processes mean administrators produce originality reports and highlight those with higher similarity indexes to markers, for example:

> I'm running the stuff through Turnitin, so all of the assessments, the essays that we get . . . I check the initial reports that we get . . . and then I send out emails and say "this many of your students have got over 25%. Go and have a look and please do have an overall look as well". (Participant 16, Social Science).

Table 5

Why participants believe departments offer student Turnitin workshops

	Arts and Humanities	Social Sciences	Sciences	Total
	n = 4	*n* = 24	*n* = 21	*n* = 49
To raise the students' awareness of what plagiarism is and how to avoid it	15%	11%	24%	84%
To develop the students' academic writing skills	77%	79%	41%	65%
To provide students with an opportunity to check their work formatively before the department checks it summatively	46%	68%	53%	57%
To develop the students' referencing skills	62%	63%	41%	55%
To counter student anxiety about plagiarism	38%	53%	29%	41%
To meet students' demands for skills support/access to learning resources	38%	53%	24%	39%
I do not know	8%	11%	12%	10%

Staff were also asked whether or not their department organised training workshops for students. The results suggest many did not know whether workshops were offered (40% in Arts, 47% in Social Sciences and 44% in Sciences, the majority of these being academic members of staff). Moreover, when staff selected that their department did or did not organise workshops, we saw responses of both "Yes" and "No" from the same department in five cases, and "No" from respondents in departments where workshops were indeed delivered. We can infer a lack of communication between staff, and possibly miscommunication from them to students about these matters. When asked why departments did not organise workshops 12 of the 24 respondents did not know and 12 offered a variety of responses. The most cited were: "Because we feel students should already know what is expected of them" (4), "Because we collectively agreed that student use of Turnitin encourages bad academic practice" (3) and "Because we don't know enough about how Turnitin can be used to develop students' academic skills" (3).

The 49 staff who did indicate that their department offered training to students were also asked why (see Table 5). Note that the LET "markets" workshops as primarily a tool for improving the integration of source material and an aid to writing skills, and then to prevent and counter plagiarism. Recall also from Table 2 that 67% of Arts, 27% of Social Science and 22% of Science respondents indicated using Turnitin as a formative tool to promote student discussion of academic integrity and writing skills. In the Arts and Social Sciences the most common reasons for delivering training were developing writing and referencing skills, with the Social Sciences also identifying that it gave students the chance to formatively check their work. In the Sciences, formative checking was the most commonly-selected reason, which is surprising given few staff claimed to use Turnitin for this purpose with their students.

Survey questions asked staff to comment on the impact they perceived Turnitin has had on staff and student awareness of plagiarism, students' writing and assessment and misconduct case practices. Here, impact was measured on a scale of "positive" (3), "no impact" (2) or "negative" (1). T-tests showed that staff who said their department organised student workshops perceived a significantly more positive impact on students' awareness of plagiarism (mean difference = +0.542, SE = 1.83, $p < 0.01$) and on the quality of students' writing (mean difference = +0.383, SE = 0.148, $p < 0.01$) when compared with those that did not offer training. The interviews highlighted the speculative element of what impact Turnitin has had, for example:

> I think that, delivered very early on, as in, first term, a tutorial which introduces them to this tool and perhaps gets them to put a piece of work through it, on a completely formative basis, might be helpful in demonstrating to those students who still don't really understand what plagiarism is, and how it can affect their own writing, it could be useful in demonstrating to those students, "well this is what it is, and this is how it can affect you, and this is how you can remedy it". (Participant 11, Arts).

> The conversations you have with students when you're in the workshop with them. Those sort of, the light bulb moment shall we say. Those where they see actually, although they might have got A's in their A level results and their A level work, and they put that through Turnitin and they realise "oh actually, hang on a minute, there's a problem here. Now we're on a different level". That light bulb moment is the impact I see. (Participant 3, Social Science).

However, in one case the benefits were more tangible:

> We had tutorials, I think a week before submission . . . for this Masters module, where students were shown how Turnitin works... And I could see the difference in the submitted coursework, just by reading it . . . I looked through the material without using Turnitin, marked it, and I could already see that this was much smoother at least. (Participant 7, Science).

The survey then looked at the training and support given to staff users, and about their confidence using the software (see Figure 2). They were asked if they were "very confident", "confident", "not very confident" or "not confident at all" to (a) add submission points to a Blackboard module site, (b) upload documents to Turnitin and access the Originality Reports, and (c) interpret the Originality Reports. The survey also recorded the source of training or support and the results were coded into those that indicated they had received it from the centrally-based LET or E-Learning Team (who are responsible for Blackboard) or not. This is to give a sense of whether staff were supported by the "official" central service or another, such as informal peer instruction. Of the 52 users who indicated they had received some formal or informal training or support, 35 had received "official" training. We compared the confidence of those with and without training (measured with a "4–3–2–1" scale), using a MANOVA, finding a significant effect of training on the groups' confidence, $F(3, 48) = 0.181$, $p < 0.05$ (Pillai's trace). There were significant between-subject effects in terms of (a) setting up submission points, with an average of 0.64 confidence increase ($p < 0.05$), and (b) uploading files and accessing originality reports ($p < 0.05$), with an average of 0.71. There was no significant difference in confidence in (c) interpreting originality reports.
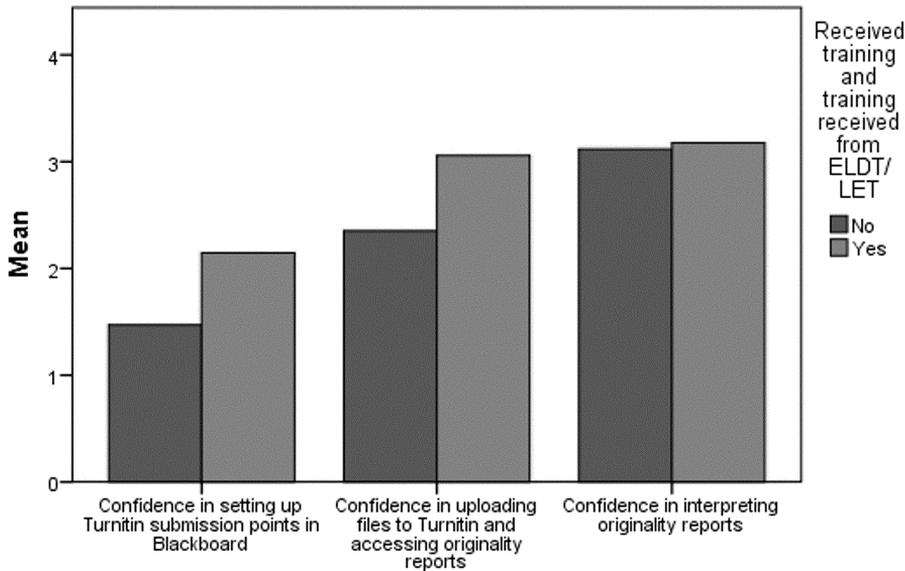
Figure 2. Mean confidence in Turnitin use for staff who had received central and non-central training (*n* = 52)

We did not find that length of use (more than three years, one-to-three years, and less than one year) was a significant factor when we included it in the model as a covariate (*p* > 0.2).

The survey and staff interviews have provided a useful snapshot of how Turnitin is perceived at the University. Considering the results in the institutional context suggests a number of key themes for further exploration to confirm Turnitin's benefit and how best to provide staff and student access.

Discussion

This study sought to understand to what extent staff use Turnitin, why they use or do not use it, their perceptions of use and the impact they perceive it has on academic integrity, writing skills and assessment procedures. We now reflect on the above results, considering the role of the department and the individual on Turnitin use.

The outcomes of how and why respondents use Turnitin (Tables 1 and 2) differed by cluster. In the Arts, nine people said they currently used Turnitin. A department that was highly represented in this cluster reported using Turnitin to help students understand what plagiarism is and how to avoid it, encouraging them to improve their writing skills, over detecting plagiarism. In the Social Sciences the overriding reason for using Turnitin was to detect plagiarism (21 people), with two departments accounting for the majority of these responses. The main reported use (checking work that on marking had been suspected of misconduct), saw eight of the 27 people coming from one social science department alone, though three of these respondents also said they

used it formatively. This is noteworthy as the department seemed to show a quite uniform pattern of use and knowledge of how their department used Turnitin. Such intra-departmental similarity was not widespread in other departments that had larger numbers of respondents.

Reasons that emerged for non-use indicate a need for more available information and staff training. Science colleagues felt that Turnitin would not be particularly effective or was unnecessary in monitoring integrity, due to the factual and descriptive nature of lab report write ups, as well as a predominance of computing languages in assessments. However, the interviews suggested that assignments on some courses could be suitably assessed by Turnitin. Some Arts survey responses also indicated assessments do not necessitate using Turnitin (38%), but members of this cluster tended to still promote formative aspects of Turnitin access. The expectation here is that such subjects use traditional written tasks, expect critical discussion and the use of source material, thus the result stands out. The majority of such responses were from an Arts department whose students produce practical, non-essay based assignments more similar to the Sciences. It is important therefore to note that not all types of student assessment might benefit from text-matching analysis, and that Turnitin might not be the most suitable tool for this. There also seemed to be a lack of openness in some departments, to considering Turnitin's potential value alongside other strategies for assessing academic integrity that were more highly favoured. Furthermore, the data for one Arts department showed a collective perception that staff were not permitted to use Turnitin for "policing" integrity, instead students could only use it for formative purposes. It is proffered that this is due to ambiguous initial briefings and a lack of later engagement in training.

Many staff appeared unaware that students had access to training, suggesting a need to better promote the student workshops to departments. Some were unsure of whether workshops were organised by their departments, or were incorrect in believing that none were offered. Of the 24 academics who believed their department did not offer student workshops, the first author personally organised sessions for seven departments in which 18 of these academics work. Such academics will lecture on programmes and/ or act as students' personal supervisors, and arguably, they should be expected to know the resources provided as part of their departmental study skills training.

The survey participants' awareness of how Turnitin can be used, and for what purpose, implies a need for more conveniently accessible staff training. It is encouraging that the survey suggests that those who had received central training had a more positive view of the value of student access, and reported more confidence in using the software themselves. Though a programme of staff training already exists, this study highlights a need to develop and deliver it in ways that inform and empower staff to use Turnitin effectively, fairly and transparently in assessing students' academic integrity.

Conclusion

This study aimed to scope out how widely Turnitin is used across the University of York by staff and students and to understand how users view its impact on academic

integrity, writing and assessment processes. This paper has presented the results of the staff survey and interviews. Emerging themes point to a diverse use between clusters, indicating a need to provide more information to staff about how they can effectively and efficiently use Turnitin, as well as what potential benefits there are for encouraging students' formative use. The student survey will hopefully provide data about how students use Turnitin and what value they believe it has for their attainment, which can be used to inform staff with currently limited awareness of impact, and in some cases concern about students inappropriately using the software when writing. Thus far, the study has proven insightful for the Learning Enhancement Team in demonstrating how and why different academic departments use Turnitin and indicating where we can inform staff of its potential. We aim to create a holistic culture of academic integrity that seeks to educate members of the University community as well as promoting vigilance to misconduct and systematic, appropriate handling of cases. For this to happen, we will need staff and student support and cooperation, in the context of time-pressured academic workloads. As the study continues and reaches its conclusion, it is expected that our findings will enable the LET to lead the University's initiative to achieve such goals.

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