An evaluation of the use of Turnitin for electronic submission and marking and as a formative feedback tool from an educator’s perspective

Emily Buckley and Lisa Cowap

Emily Buckley is a Health Psychologist and a Principal Lecturer at Staffordshire University. Her research interests focus on health promotion, in particular sexual health, health inequalities, parental attitudes to childhood vaccinations, evaluation of healthcare service delivery and reducing the harm associated with intravenous drug use. Lisa Cowap is a Trainee Health Psychologist, part-time Research Methods lecturer and research assistant at Staffordshire University. Her interests lie primarily with Health Psychology and she is currently engaged in research evaluating a weight management programme. Address correspondence to: Dr. Emily Buckley, The Science Centre, Staffordshire University, Leek Road, Stoke-on-Trent, ST4 2DF. Email: e.j.buckley@staffs.ac.uk

Abstract
The aim of this project was to pilot plagiarism detection software and online marking, evaluating its use with staff on a first year undergraduate module within the psychology department at a UK university. One hundred and sixty undergraduate psychology students submitted three assignments via Turnitin, and staff used the software to check for instances of academic misconduct and marked submissions using the GradeMark feature in the software, providing online feedback to students. Eleven members of teaching staff took part in focus groups to gain insight into their experiences of using Turnitin in this manner, and this paper reports the findings. Results indicated that staff identified several strengths but also several weaknesses to the implementation of Turnitin and GradeMark. The OriginalityCheck feature received very positive evaluations due to its capacity to provide a clear and timely indicator of plagiarism levels in assignments and a useful formative learning tool for students from an educator perspective. Staff did however encounter some technical difficulties when using the software. In conclusion, for staff, the benefits of using Turnitin were clear, and it has the potential to be a very valuable asset to plagiarism detection and electronic marking.

Introduction
Generally, instances of plagiarism in higher education are increasing (Dahl, 2007) to the extent that academic dishonesty is well recognised globally as a growing issue (Butakov & Scherbinin, 2009; Selwyn, 2008). Many students plagiarise unintentionally due to a lack of understanding regarding correct referencing techniques (Ellery, 2008), and many do so deliberately, particularly due to the availability of the Internet as a research tool, which has “amplified the problem of plagiarism” (p. 125; Maddox, 2008). It appears that a large proportion of students believe Internet search engines to be their only means to research (Galvin, 2005), and deliberate plagiarism from the internet is not unusual due to the ease with which students can retrieve vast amounts of information (Warn, 2006) and the short time it takes to copy and paste into assignments (Cromwell, 2006; McMurtry, 2001).

Despite attempts at increasing student awareness of plagiarism at the university in question, academic misconduct continues. Information is provided to students on academic integrity
within handbooks, and in the past 2 years, the topic of academic misconduct has been specifically
covered in first year tutorials in an attempt to deal with this issue. Yet these efforts have had a
limited effect.

Plagiarism detection software is frequently used by institutions internationally as a method of
dealing with academic misconduct and Turnitin is an example of such.

Previously, the benefits to educators outside the UK of using Turnitin have been illustrated, including its effectiveness at reducing levels of plagiarism within student assessments.

Furthermore, responses to the implementation to Turnitin have been positive; educators find the software easy to use and save time in both marking activities and when assessing levels of plagiarism in student submissions.

Practitioner Notes

What is already known about this topic

• Instances of plagiarism within higher education continue to increase, and their investi-
gation diverts a considerable amount of academic time away from teaching-related activities.
• Plagiarism detection software is used by institutions internationally as a method of
dealing with academic misconduct and Turnitin is an example of such.
• Previously, the benefits to educators outside the UK of using Turnitin have been illustrated, including its effectiveness at reducing levels of plagiarism within student assessments.
• Furthermore, responses to the implementation to Turnitin have been positive; educators find the software easy to use and save time in both marking activities and when assessing levels of plagiarism in student submissions.

What this paper adds

• The effectiveness of the implementation of Turnitin in the UK is under-researched, and findings here add support to those of the limited number of evaluations world-
wide; educator perspectives of the software were positive, particularly the ability of the software to save time when marking electronically and also when assessing plagia-
rism. Furthermore, using Turnitin as a formative feedback tool enhanced student’s knowledge of academic misconduct and the quality of their academic writing.
• Staff encountered limited difficulties with software usage, and problems that were faced are easily overcome with advances in the software and would benefit Turnitin users in the future.
• Specific (bespoke) training sessions on e-marking and plagiarism-checking software are much more useful to educators than generic training. Staff appreciated their focused nature; training was more useful to them as it was directly relevant to their use of Turnitin.

Implications for practice and/or policy

• Positive evaluations by staff indicate the usefulness of Turnitin as a tool to transform marking and plagiarism detection, alongside providing a useful formative learning tool within universities.
• Quicker marking due to the use of GradeMark within Turnitin to mark electronically and quicker identification of instances of academic misconduct positively impacts upon staff, creating increased staff time for other prioritised activities.
• During the introduction of Turnitin in a department, staff training is particularly important and creating training of a specific nature rather than a general overview better equips educators to embrace electronic marking and plagiarism detection, which may be unfamiliar to the majority.

within handbooks, and in the past 2 years, the topic of academic misconduct has been specifically covered in first year tutorials in an attempt to deal with this issue. Yet these efforts have had a limited effect.

Plagiarism detection software is frequently used by institutions, and Turnitin is an example that is used worldwide by more than 800 000 educators (The White Paper, 2010).
The use of Turnitin has been piloted within postgraduate programmes at the university and was discussed as a method of detecting academic dishonesty within student assignments, alongside its use as a formative learning tool, allowing students to submit a “practice” submission and view their Originality Reports before final submission. While there have been positive responses from students, this has not been formally evaluated, and only involves a small subset of staff. The intention of the current study was to explore the possibility of a whole department adopting the change to e-marking and to assess the impact of using Turnitin as a formative learning tool.

Preliminary research suggests the benefits of software implementation for staff are clear, effectively reducing levels of plagiarism (Baker, Thornton & Adams, 2008; Batane, 2010; Mannix, 2008), and many educators find the quality of student submissions increases (Coffey & Anyinam, 2012).

While merely implementing Turnitin can effectively reduce plagiarism levels (Baker et al., 2008), the software can potentially be effective as a formative learning tool as students may lack knowledge of academic misconduct (Ryan, Bonanno, Krass, Scouller & Smith, 2009).

In terms of functionality, staff have found the software easy to use, and any difficulties encountered were easily overcome (Heikes, 2006). Staff found it a faster method of marking (Henderson, 2008), and their workload was decreased (Coffey & Anyinam, 2012). This was particularly due to a reduction in the time staff spent searching for instances of academic misconduct (Williams, 2007) as Turnitin identifies potential instances of plagiarism, rather than staff having to search for evidence of this by hand (Sutherland-Smith & Carr, 2005). Not only this, through using Turnitin as a formative learning tool, ultimately student submissions should be of a greater quality, demonstrate correct referencing practices and contain fewer instances of plagiarism. As such, Turnitin is predominantly positively received by educators (Coffey & Anyinam, 2012).

Despite this, it should be highlighted that while the Turnitin database is extensive, considering a variety of both published and Internet sources (Royce, 2003), it does not contain all work that has ever been published and it merely identifies instances of where texts match, thus facilitating the plagiarism detection process. Therefore, the detection of plagiarism still ultimately lies with the assessor (Sutherland-Smith & Carr, 2005), and new users should demonstrate caution if anticipating Turnitin will detect all instances of academic misconduct.

While there is some international research to suggest the effectiveness of Turnitin in general (e.g., Baker et al., 2008) to the researchers’ knowledge, the impact of implementing Turnitin specifically with academic teaching staff and assessing its use as a formative learning tool is yet to be illustrated in the UK. It is important to evaluate online marking and detection tools from an educator’s point of view to assess whether any specific issues need to be overcome, and whether the software can successfully be utilised formatively. Furthermore, staff training is crucial to the successful adoption of e-marking, and so the first part of this paper will evaluate staff perceptions of training received.

Providing information about plagiarism to students has had limited impact in the university discussed here; therefore, it was felt that using Turnitin to educate students may have a greater impact. A seminar was developed to increase student’s knowledge of academic misconduct, outlining different types of plagiarism, and Turnitin was used to illustrate this. Students submitted a piece of work and generated an Originality Report, which was then discussed in detail; therefore, through using the software in this manner, students were able to learn how to improve their academic writing while increasing knowledge of plagiarism. It was also highlighted that while Turnitin detects most academic misconduct, tutors mark submissions and can still therefore detect additional plagiarism.

Consequently, this study aimed to adopt electronic submission of assessments and electronic feedback systems via Turnitin on a core first year undergraduate module as a formative learning tool.
tool. Through specific, contextualised training, it also aimed to create a staff team able to use electronic submission and marking systems, to deliver effective electronic feedback to students and to identify possible cases of academic misconduct in a clear and timely way. Staff evaluations of the project were investigated in terms of strengths, weaknesses, barriers to implementation and suggestions for improvement.

**Method**

*Design*

Staff were trained how to use the Turnitin and GradeMark systems in bespoke training sessions delivered by an academic team leader. First year undergraduate psychology students received a focused seminar on academic misconduct illustrated through the use of Turnitin, then submitted three assignments electronically via Turnitin during their first semester and received electronic feedback via the GradeMark system.

*Turnitin staff training*

Relevant teaching staff \((n = 18)\) from one UK university attended training in June and July 2011. The training session was very specific; staff were shown exactly what they were required to do within the module (marking and checking originality) and shown how to teach students to use Turnitin, including how to explain Originality Reports as part of formative learning and discuss feedback through GradeMark. Staff were provided with a student login (in addition to their staff ID) to enable them to access Turnitin from a student’s perspective, thus enhancing their knowledge of the system. An informative handout with instructions and information covered in the training session was also distributed to staff.

Staff responses to the training session were assessed through a mini online questionnaire post-training. The questionnaire evaluated how useful the staff found the session on a scale of 1 (not at all useful) to 10 (extremely useful) and also asked what aspects they found useful and not useful in open-ended questions. Staff evaluations of the training were also covered within focus group discussions.

*Participants*

Eleven members of teaching staff participated in one of three focus groups in January 2012. Participants were given pseudonyms for anonymity. Two participants were male (Bruce and Henry), and nine were female (Holly, Grace, Laura, Kate, Marie, Anna, Freda, Ellen and Rachel).

*Materials*

Prompts were used for focus groups, targeting general views as well as investigating issues/difficulties encountered. Impressions of the relative strengths and/or weaknesses of use of e-marking and originality checking and barriers to the successful use of the software were discussed, alongside the impact of using Turnitin formatively and recommendations for improvement.

*Procedure*

Potential participants were approached via email and asked if they would be willing to participate in a focus group. Eleven out of the 18 relevant teaching staff were willing to participate and were assigned to one of the three focus group sessions that took place in a quiet room within the university. Focus group sizes ranged from three to four participants and were facilitated by one female research assistant who had not been involved in the training, or teaching of the module. They lasted approximately 1 hour each and were audio-recorded.

*Analysis*

All focus group data were transcribed verbatim. Upon transcription, focus groups were then subjected to thematic analysis to identify emerging themes within the transcripts. The main
themes were corroborated by two researchers for validation. In the quotes from transcripts below, emphasis is indicated by underlining emphasised words. Square brackets “[]” indicate pauses, “(.)” indicates a pause of less than one second and “ = ” indicates the absence of a gap in speech.

Results

Staff training evaluation

Staff responses to the training session were very positive. In terms of usefulness, the mean score was 8.89 (standard deviation = 1.53) out of a possible 10, indicating staff found the session highly useful. Furthermore, only one out of the 18 teaching staff rated the usefulness of the session below a 7, demonstrating the majority of the sample had positive evaluations of the training they received (and this individual commented that it was not very useful to them because they had previous experience of using Turnitin).

Staff appreciated the specific nature of the training, and many highlighted this to be the most useful aspect:

It covered Turnitin processes that were directly applicable to marking, rather than an overview of everything the software could do. (Questionnaire response)

 Another aspect found particularly useful was the ability to see Turnitin from a student’s perspective. This was evident in both questionnaire and focus group responses and so clearly was a great strength:

What was the best thing was having a student, a student in inverted commas erm ID (.) erm because that meant that I then had to use it on another module, an had to tell the students how to use it, and that meant I could go in and see exactly what they see and that was (.) that was probably the most useful thing. (Ellen, Staff Focus Group One)

Due to such a positive response to the training, the majority of staff indicated that they did not find anything not useful when asked after the session. Yet upon reflection in the focus groups, staff highlighted that time had passed between receiving training and using the software that led them to forget what they had originally learned:

I mean I’d forgotten it by the time I had to use it. (Henry, Staff Focus Group Three)

This was the largest weakness identified in the training however and one that is easily overcome by providing a refresher session or through offering training closer to the date of implementation of the software.

In conclusion, staff training sessions were well received and positively evaluated, particularly due to the accessibility and specific nature.

Staff focus groups

Upon analysis of the staff focus group transcripts, four main themes emerged that represented evaluations of the e-marking process by staff: strengths in functionality, weaknesses in functionality, assessment suitability and positive evaluations of the OriginalityCheck feature. Each theme will be described below, alongside representative quotes from the transcripts.

Strengths in functionality

Staff identified several different strengths of using GradeMark to mark assessments. From receiving training on how to use the software, initial expectations of marking through GradeMark were positive:

I was really excited actually (.) I have to say I thought ‘this is going to be ace’. (Anna, Staff Focus Group Two)

Utility of the QuickMark Comment feature in the software was identified as very useful to the staff and saved time during marking:
I found it a lot quicker to make the comments and even the general comments, just to type them is a lot quicker, so I quite liked that. (Rachel, Staff Focus Group One)

Particularly as saved comments could be quickly re-used:

Grace: Initially I was slower than I would be when I was marking an essay by hand (.) but once I’d got the hang of oh I can save this comment and use it again later =
Holly: = Yeah =
Grace: = Then it is getting faster. (Grace & Holly, Staff Focus Group Three)

Staff did find that marking became faster for some assessments:

Yeah I think overall I was quicker, on the essay. (Holly, Staff Focus Group Three)

Furthermore, having access to assessments online was found to be positive, meaning that there was no longer a need to transport marking between the office and home:

I like the online bit I think, like you were saying it’s nice to be able to access it when you get home. (Anna, Staff Focus Group Two)

Positive evaluation of OriginalityCheck

One of the largest themes that emerged from the staff transcripts was regarding the Originality-Check generated by Turnitin on submission of an assignment. Staff praised this function for several reasons. Not only did it enable quicker and easier identification of instances of academic misconduct for staff:

We seem to be having more academic misconduct over the past few years, to be able to check immediately how much is original and how much is copied, and to be able to see where it’s copied, whereas before we’d have to use Google. (Freda, Staff Focus Group One)

However, it also appeared to increase student’s knowledge of plagiarism, which was noted by staff:

Potentially this year I’ve had less issues with plagiarism and they all seem to know (.) a l-, understand more about what it is. (Anna, Staff Focus Group Two)

An increase in understanding could be attributed to the use of Originality Report as a formative learning tool, through the illustration of what constitutes academic misconduct.

Furthermore, the practice link that was made available to students was praised due to its ability to increase knowledge of academic misconduct and also provide reassurance and be used as a learning tool for students who may be unintentionally plagiarising:

Freda: It reassures them doesn’t it? =
Ellen: = Yeah [pause] ’cos I think once we give them the training about er academic misconduct, making sure that they don’t do it, but we have the danger of scaring them and then increasing anxiety. (Freda & Ellen, Staff Focus Group One)

Weaknesses in functionality

While the majority of emerging themes were positive towards the practice of using Turnitin for e-marking, plagiarism detection and as a formative learning tool, there were also several weaknesses in functionality identified by staff that negatively impacted upon their marking. These issues in functionality and assessment suitability (see last theme below) were the only negative evaluations of e-marking implementation.

QuickMark comments/hardware issues. Staff described difficulties inserting QuickMark Comments on the text, which meant leaving feedback electronically was challenging:

When you want to make an annotated comment, again it’s slow and you click on wherever you want to make it, it doesn’t sort of spring up immediately and also it (.) it’s very difficult to get it exactly the place you want er the comment. (Henry, Staff Focus Group Three).

Second marking. The process of second marking in GradeMark was unclear to staff:
a space for the second marker and then space for the agreed mark so obviously you haven’t really got that on Turnitin, is it just the case then that you talk to the person and you agree a mark and that then is the final mark. (Ellen, Staff Focus Group One)

With no apparent space for the second marker’s initials or an agreed grade, staff were confused as to how and where to second mark within GradeMark. This was not so much a problem for the assessments marked during the piloted use of the software because a limited amount of second marking was required; yet for different modules, some improvement and clarification is needed here.

Assignments by groups feature. There were also two functions identified by staff that are missing from the TurnitinUK “Assignments by Groups” view, which are invaluable to their marking. First, the grade of the assessment once marked was not displayed on the overview screen, which is highly useful during the marking process:

You can’t see (.) er (.) which one you’ve marked, or what grade you’ve given it erm, which (.) in the early stage of marking is really useful to say ‘well y’know I gave that one a (.) whatever, is that equitable?’

(Marie, Staff Focus Group Two)

There is also no identification of the assessments word count on this screen either, which is an important function to facilitate marking:

“Can’t access word count which is really frustrating.”

(Marie, Staff Focus Group Two)

Assessment suitability
Staff also questioned the suitability of the assessments being marked through GradeMark due some of the difficulties they came across when marking. It was generally felt that a workbook took a lot longer to mark online than it would have done by hand (it contained short answer questions, and so general feedback on work was not particularly useful, staff wanted to be able to tick or comment on each question):

Kate: Also the PDP (.) workbook =
Marie: = Yeah =
Kate: = Which if it, if it had been in hard copy, I could have marked them in about five, ten minutes =.

(Kate & Marie, Staff Focus Group Two)

Further, the poster assessment caused a couple of issues when marking in terms of the software not uploading posters correctly:

I had so many people, well I had about erm half of them where the sections just didn’t upload, so there was a mass of sections just missing off them and they claim when they put it in the text was there. (Holly, Staff Focus Group Three)

And also viewing the posters in their entirety in order to mark them appropriately:

In that small window you just weren’t able to get a nice overview y’know the point of a poster is for it to look good as well. (Holly, Staff Focus Group Three)

Discussion
It is clear that certain aspects of GradeMark/Turnitin were positively received and evaluated by staff, yet there were also some aspects not so well received. The ability of the software to provide an OriginalityCheck feature for staff and for students emerged as the most prominent theme, receiving very positive evaluations due to the time it saved by providing a quick and clear indication of plagiarism levels within assessments. Staff evaluations of this function are echoed in previous research in which staff felt the use of software to identify cases of academic misconduct would save them time (Sutherland-Smith & Carr, 2005; Williams, 2007) and decrease their workload (Coffey & Anyinam, 2012).
Furthermore, staff indicated a reduction in plagiarism issues and increased student’s knowledge of academic misconduct, potentially as a result of the specific student seminar focused on plagiarism, which used Turnitin as a formative learning tool. This not only highlighted unacceptable practice to students but also provided reassurance to students who may worry regarding unintentional plagiarism.

Staff identified several strengths in the functionality of the software that made marking easier and quicker for certain assignment formats, such as the use of QuickMark Comments, which has also been found previously, with marking through GradeMark being quicker than marking by hand (Henderson, 2008). However, they felt that several functions would be beneficial to their marking, which did not appear on the TurnitinUK Assignments by Groups view, such as an indication of papers that have already been marked, the grade given, space for second marking and an indication of the word count. Staff also found some assignments easier to mark online than others. These weaknesses however are easily overcome and would considerably improve and quicken the online experiences of the staff. The weaknesses identified by staff in the current study have not been highlighted in the literature thus far, yet the majority of previous evaluations have concentrated on student views of the software, as opposed to an in-depth insight into staff views. Therefore, it is possible that staff have come across such difficulties, but they just have not been reported due to the focus of previous evaluations.

Staff were also very positive towards the bespoke training they received, praising the specific nature of it which provided contextualised training directly relevant to how they would be using the software. A number of staff had already attended general training in the use of the Turnitin system and had found it unhelpful as it was so generic. This is an important finding as future staff training can employ such methods to enable the successful training and engagement of staff.

In terms of limitations, the sample was relatively small and views from this sample represent those from staff at one university within the UK, thus generalisation on a larger scale is limited. That said, theoretical saturation was achieved within the focus groups, suggesting that all local staff perceptions of the software have been included. However, it is realised that while saturation was achieved here, this was within the specific sample employed in the research and that perspectives of all UK university educators may not be reflected here. A few of the staff had prior experience of alternative online marking systems, and this may have impacted upon their evaluations due to comparison with the differing software systems.

In conclusion, e-assessment via Turnitin was predominantly positively evaluated by staff, and the difficulties that were encountered were technical ones as opposed to difficulties with practice. The most useful aspect identified was the ability to identify suspected cases of plagiarism in a clear and efficient manner, with also the capacity to improve the quality of student writing and knowledge of plagiarism, suggesting that Turnitin has the potential to become a valuable asset to marking and detection of academic misconduct within UK universities.

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**References**


