e-Plagiarism Detection at Glamorgan

Esyin Chew and Haydn Blackey

Abstract—There are increasingly plagiarism offences for students in higher education in the digital educational world. On the other hand, various and competitive online assessment and plagiarism detection tools are available in the market. Taking the University of Glamorgan as a case study, this paper describes and introduces an institutional journey on electronic plagiarism detection to inform the initial experience of an innovative tool and method which could be further explored in the future research. The comparative study and system workflow for e-plagiarism detection tool are discussed. Benefits for both academics and students are also presented. Electronic plagiarism detection tools brought great benefits to both academics and students in Glamorgan. On the other hand, the debates raised in such initial experience are discussed.

Keywords—Educational Technology, Plagiarism detection, Turnitin

I. INTRODUCTION

THIS paper is a short research communication article. It is a review of an innovative educational technology used for plagiarism detection and feedback at the University of Glamorgan.

"Plagiarism itself is usually linked with academic misconduct by students and by lecturers. The growth of the Internet has made gate-keeping difficult. Academic life tries to balance gate-keeping with facilitation, and this dialectic presents real challenges today, above all…" [1]

Academic integrity and plagiarism have been considered as twinned issues. Many researchers have discussed various electronic plagiarism detection tools and good practices to prevent academic misconduct [2] - [5]. The UK Research Integrity Office [6] provides advice and good practice of how-to guide on conducting research without plagiarism. Plagiarism.org [7] also aimed to promote academic integrity by helping both academics and students to produce quality writing and research. Drawing from various schools of literature, Chew and Jones [8], [9] state that one of the major challenges of traditional learning and teaching activities is the poor quality of academic feedback in higher order thinking level. There are many online assessment and plagiarism detection systems in the market aimed to compliment the assessment and feedback process in the higher education.

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However, how effectively these systems and practices are able to simultaneously promote academic integrity and to enhance learning and teaching experience remains debatable. In contrast to these electronic plagiarism detection tools, Butakov and Scherbinin [10] also assert that students' access to digital information for easy plagiarism is a growing problem in this digital information era. To respond to these issues, an efficient and effective educational technology such as electronic plagiarism detection system may help. This paper details and discusses such an innovative tool and method - TurnitinUK through Blackboard with open access to all academics and students at Glamorgan.

II. RESEARCH METHOD

The paper adopts single instrumental case study method [11], [12] to investigate the current phenomenon through analysis of a case – the University of Glamorgan. It provides an in-depth understanding of the Glamorgan's activities and initial experience for plagiarism prevention. One criticisms of case study research has been levelled, that is the analysis of a single case studies cannot be generalised due to its poor statistically significance [13], [14]. Yin [15] recommends case study research to investigate contemporary phenomena within real-life contexts especially when the boundaries between phenomena and contexts are not clear (in the research case is the context of plagiarism and education). Case study strategy was used in order to understand such a complex issue and add strength to what is already known through previous research. Creswell [16] proposes to use multiple sources for single case study analysis, such as qualitative observations, documents and interviews. This paper is an in-depth discussion based on an institutional experience, published documents and statistics and quality observation through all training sessions and daily support for the electronic plagiarism detection system, TurnitinUK through Blackboard.

III. e-PLAGIARISM DETECTION AT GLAMORGAN

Many researchers have conducted extensive research on academic integrity and evidently claim that how Internet has vastly increased the plagiarism [10], [17], [18]. Carroll [19] defines plagiarism as the act of either intentionally or unintentionally taking other's work as your own and for your own benefit without recognising the original author. In the emerging digital culture, it may be tempting for students to embed the "copy-and-paste" culture into their study or even to intentionally purchase essays or assignments from the pervasive online services such as DissertationExpert [20] and eBay [21]. All higher educational institutions in the globe, for more or less, would have a set of plagiarism prevention policy or practice to promote academic integrity. The University of Glamorgan has no exception. The vast experience and

knowledge of a Glamorgan academic in the respective subject area is the most traditional way to detect a piece of plagiarised work. "This paragraph is definitely referenced from XX book without proper referencing" or "I must have seen this paragraph from somewhere else" are the first thought of an experienced academic. Many academics may try to google the student's work or alternately, adopt one of the plagiarism detection tools on the market to assist in the related agenda. Some of the plagiarism detection tools are able to integrate with a Virtual Learning Environment (VLE) such as Blackboard or Moodle as a building block. SafeAssign [24] and Turnitin [26] are two good examples. The following table summarises from different schools of review for the two competitive services:

TABLE 1. COMPARISON FOR TURNITIN AND SAFEASSIGN [22] – [26]

	Turnitin	SafeAssign
Company	iParadigm (TurnitinUS), nlearning (TurnitinUK)	Blackboard
Country of Origin	US	US
URL	submit.ac.uk	mydropbox.com
Integrate with VLE	Blackboard/WebCT, Moodle, ANGEL or with any class or university portal using Turnitin API Integration Package	Blackboard
Cost	License fees varies for institutional, departmental or individual quotation: about USD 87 cents per student annually	Free
Privacy	- Provide individual institution repository - Faced complaints and lawsuits from students who say that the for-profit company's policy of storing student papers in its database violates intellectual property law	Asks students for permission to store their papers each time they submit an assignment through Blackboard
Databases Searched	Much larger databases and more subscribers	Smaller databases and fewer subscribers
Online Assessment	Provide end-to-end service from online submission, plagiarism detection tools, peer-review to online marking and assessment services (e.g. GradeMark and PeerMark)	- Mainly a plagiarism detection tool. - There is a marking service but not widely used (Re: Mark)
Help and Guides	- Excellent 24/7 help desk, Turnitin User Group and support team based in both UK and US. - Complete online training, help and user guides in both text and video forms	- Supported by Blackboard - Complete online user guides in document and wiki forms
Other Facilities	Provides many functions such as deselect matched sources with an immediate response, submission dates, resubmissions, more option and default settings and etc that can be decided by the instructor with wider flexibility	Less flexibility if compared with Turnitin
Support Open Office doc (.odt)	Need to convert to PDF or Word	Yes

According to various researchers' comments, TurnitinUK provides a wider and better search mechanism for plagiarism detection [22], [27]. Although SafeAssign provide a free service that is embedded in Blackboard, however, it could be argued that the efficiency, effectiveness and flexibility provided by Turnitin are more helpful in enhancing learning and teaching experience in the boundary of academic integrity. Moreover, Turnitin [26] is increasingly widely used in many higher educational institutions across the world. Thus it has a much larger database compared with SafeAssign. It is currently a worldwide standardised online plagiarism prevention service as it has been recognised as the primary choice for 450,000 academics in 108 countries at over 7,000 institutions [26].

The University of Glamorgan has implemented the Learning, Teaching and Assessment Strategy. It provides a focus for the institutional developments in the next five years - to increase the use of online assessment and enhancing prevention and detection of plagiarism [28]. The strategy is supported by the Centre for Excellence in Learning and Teaching (CELT) to promote learning and teaching excellence. CELT encourages all academics across the University and partner colleges to embed TurnitinUK through the institutional VLE (Blackboard) in their teaching module. As such, CELT highlights the benefits of TurnitinUK through Blackboard as to (1) save time and resources - the creation and submission of the assignment, and the generation of originality report will be completely online through Blackboard; (2) promote formative assessment - students can perform "self- check" on their assignment on plagiarism before submission and (3) make the submission of students' assignments, plagiarism detection and online assessment simpler - everything is integrated in Blackboard environment with a user friendly interface. Figure 1 depicts the idea of TurnitinUK through Blackboard at Glamorgan:
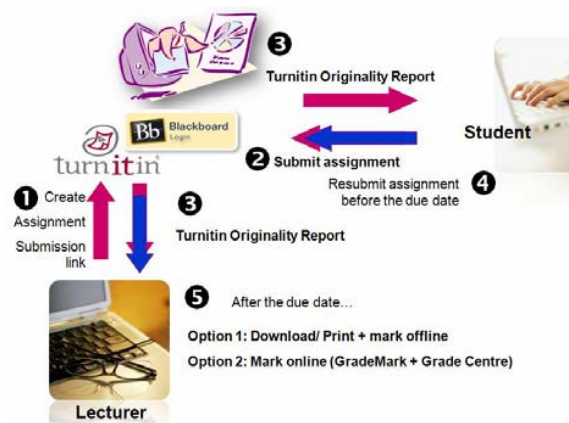

Fig. 1 TurnitinUK Through Blackboard

TurnitinUK is perceived as a formative assessment and learning tool at Glamorgan with the following workflow:

1. Lecturers create assignment submission link on Blackboard.

2. Students submit assignment to through the submission link on Blackboard in advance of the due date.

3. TurnitinUK return the digital receipt and originality report (see Fig. 2) to students.

4. By looking at the originality report, students could discuss with their tutors and enhance their work accordingly. Students are allowed to resubmit the enhanced work through the same submission link. (The processes of 3-5 could be repeated as long as it is before the assignment is due.)

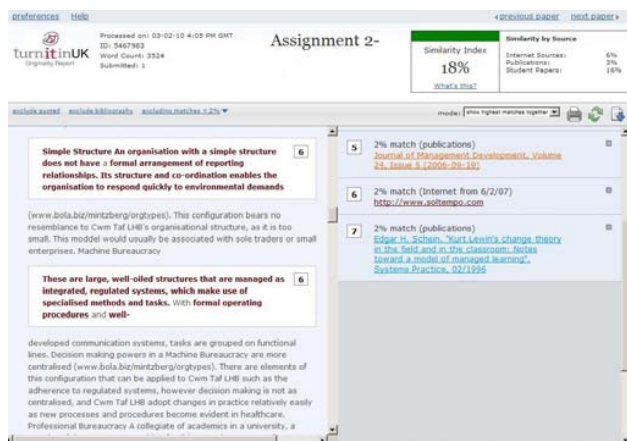5. After the due date, lecturers mark all submitted assignments either offline or online.

Fig. 2 A Sample of Originality Report

The open access to all academics and students with multiple submissions before the due date provide a formative assessment and learning process. It acts as a "self-plagiarism-check" before the final submission.

IV. DEVELOPMENT AND GROWTH OF THE USAGE

Before TurnitinUK was integrated with Blackboard, the University used it through an external website (http://submit.ac.uk). Since the end of November 2008, TurnitinUK is integrated with the University VLE, Blackboard and all academics and students can freely access the tool in the new method. This development brings the e-plagiarism detection at Glamorgan to a new era due to the vast benefits such as efficiency, flexibility and convenience. As such, there is an immense growth of usage in 2009-2010 (see Fig. 3).

CELT offers both pedagogical and technical support for TurnitinUK through two strands: disciplinary-tailored group training or one-to-one support. In addition, CELT communicates within the department and across the University by a wiki [29] and blog post [30]. Blended Learning Champions and Blackboard Administrators act as facilitators to promote and drive academics to e-plagiarism detection through TurnitinUK. All these dialogues generate interest, discussion and debates from academics across the

institution effectively. The growth of the usage and uptakes of TurnitinUK in the University is presented in the below figure.
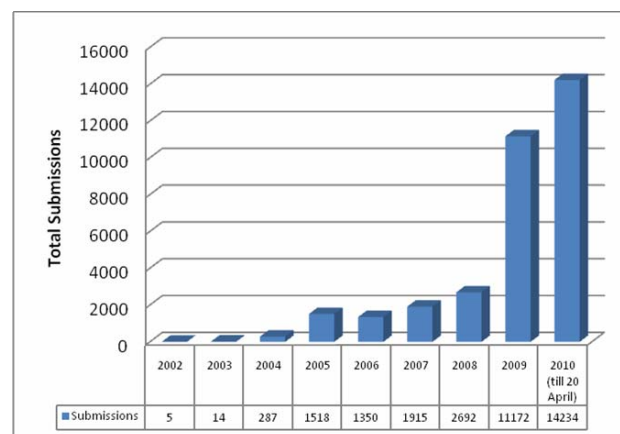

Fig. 3 The Growth of TurnitinUK Usage at Glamorgan

In overall, the initial experience for TurnitinUK through Blackboard is relatively positive. Based on the feedback from institutional experience, published documents and quality observation through all training sessions and daily support, Table 3 summarises the benefits on how TurnitinUK enhanced the learning and teaching experience for academics and students at Glamorgan.

TABLE II BENEFITS OF TURNITIN

Benefits for Lecturers	Benefits for Students
Automated assignment receiving, and plagiarism detection process	Automated assignment submission, plagiarism-check and feedback process
Prevent plagiarism	Improve academic integrity
No lost of assignment – hassle free	Paperless and digital receipt as a prove of assignment submission
List of sources and references on the originality report make the referencing check easier than before	The originality report enhance learning experience and provide formative assessment process

V. ISSUES AND DEBATES

On the other hand, there are a few issues and debates among the Glamorgan's academics related to TurnitinUK agenda as follows:

1. Whether or not to reveal the originality reports to students: TurnitinUK provides an option during online assignment setup where the instructor can have a choice to permit their students to view the original report or not, and to allow the multiple submission or not. There is an interesting debate among academics whether to reveal the originality reports to students and to allow multiple submissions. Most academics prefer to permit their students to view the originality report as a formative assessment approach to improve academic

integrity. Students could make improvement with the aid of the originality report. Contrastingly, a minority of academics choose not to reveal the originality report to their students due to certain considerations. For instance the originality may create a negative experience for the first year students or mature students who lack of ICT competence. Students may put effort on investigating how to avoid being 'caught' by the TurnitinUK system rather than learning from the originality report. CELT recommends all academics to permit their students to have access to the originality report for formative assessment. However, it is still the individual academic's responsibility to make the professional judgment for a decision that is suits to his/her teaching and disciplinary practice. Some students' voices express their positive experiences in a recent pilot project to confirm the CELT's recommendation [31]:

> "I think it is a very positive tool that enhances my learning experience. It shouldn't be used for checking students' work whether they plagiarise or not. It should be used for the purposes of developing, learning and how to write assignment in a proper way…it is a very good tool for student to learn how to progress and develop, in terms of making citation and references." ~an international student

> "It assists me against plagiarism!" ~a home student

> "In my previous university, they didn't use Turnitin at all. We had no system that could help me or support my writing skill. So I was writing assignments in the dark and I would print them out and submit without knowing they were good or any development needed. With Turnitin, I could see my whole assignment scan; I could see is there anything I missed out on references…so it definitely helps to me to write better." ~a postgraduate student

2. Privacy and copyright issues: Some students are not happy about a copy of their work being sent outside of the University. Their works that is hosted by an external company (TurnitinUS, iParadigm), indefinitely, might be plagiarised or sold. Some years ago, when the University of Glamorgan took out its subscription to TurnitinUK and the Data Protection Act was making its effects felt, CELT had checked with JISC legal services. The position was two-fold: (1) Students actually sign, when enrolling, to say they abide by [whatever is the proper title of the] taught course regulations – The signature also acknowledges that the University uses students' data for a number of purposes including the National Student Survey and plagiarism detection; (2) However, if and when any student asks about the Data Protection Act and processing their data, the answer is that it can probably be done either with consent, or without it. There is stated in the 'condition 6' of the taught course regulations [32] which mean the University can do it even without permission. It reads "The processing is necessary for the purposes of legitimate interests pursued by the data controller or by the third party or parties to whom the data are disclosed, except where the processing is unwarranted in any particular case by reason of prejudice to the rights and freedoms or legitimate interests of the data subject". Therefore, without consent, the Glamorgan

academics could use condition 6 to submit students' paper to TurnitinUK, on the basis that prevention and detection of plagiarism is a legitimate activity of the institution. One way over the 'personal data' problem is to submit papers without names anyway – using the student's number instead of names.

3. The stability and availability of TurnitinUK: Several academics who attended the TurnitinUK training raised an important issue for online submission system, "what if the system is down or the Internet provider server is not available during the submission process on the due date?" From pedagogical perspectives, CELT encourages students to submit in advance and not on the last two minutes of the due date and time. By using TurnitinUK, students need to submit their assignments days before to check for the originality and make improvement for the second or third re-submission. That could prevent the problem caused by the "server is not available" in the very last day. From the past experience, TurnitinUK has extremely low rate of service unavailable period and usually the TurnitinUK support team will send out an email reminder or warning for each server maintenance or down time to all University's TurnitinUK Administrators. However, if the students had accessibility problem during any point of the online submission process, they could always provide a screen-shot of the error page and revisit the page after it is available; or the lecturers could help them to submit the assignment in such odd case.

VI. CONCLUSION

There are various plagiarism detection services and online assessment system available in the market to enhance the learning experience. Selecting TurnitinUK as the primary e-plagiarism detection, the University of Glamorgan has implemented the building block of TurnitinUK to the University's VLE (Blackboard) across the institution. TurnitinUK provides a learning environment for students to obtain the current state of his or her performance for academic integrity; facilitates the self-initiative improvement of the work and receive immediate feedback from the originality report.

This paper describes the details and debates of an institutional adoption of this innovative tool and method, TurnitinUK through Blackboard with open access to all academics and students at Glamorgan. Top three issues challenged by the academics are (1) whether or not to reveal the originality reports to students; (2) Privacy and copyright and (3) The stability and availability of TurnitinUK. In summary, this e-plagiarism tool and method at Glamorgan has developed immensely and this has reduced the overall plagiarism rates and enhanced student's experience in the initial study. The paper is merely an initial discussion and giving details of e-plagiarism at Glamorgan. It is proposed to have further empirical investigation on bigger student cohort such as (1) a comparative experience for same cohort of students who are using TurnitinUK for subject A and not using TurnitinUK for subject B; (2) a comparative experience

for different group of students who are using TurnitinUK and for those who are not using TurnitinUK.

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