



Defeat the cheat: how technology can aid in the detection and investigation of contract cheating

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In October 2017, the Quality Assurance Agency for Higher Education (QAA) published its report on contract cheating in response to growing concern in the Higher Education Sector; following this, in May 2018 the BBC began reporting on the rise of contract cheating (BBC, 2018; Smith, 2018), including a report on popular YouTubers who were being paid to promote essay mills and essay writing services, encouraging students to buy their coursework rather than 'waste valuable time' completing it themselves (Jeffreys and Main, 2018). Contract cheating is a fast growing problem facing all higher education institutions which is being reported on more widely, and the implications for the potential de-valuing of qualifications and the social impact is clear. Furthermore, 'Essay mills' have also adopted more direct marketing strategies through targeting students via the internet; some are targeting students outside their university campuses.

Greenwich School of Management (GSM London) is an independent provider of Business education, Law and Economics, offering undergraduate and postgraduate degrees in partnership with the University of Plymouth. GSM aims to support social mobility and inclusion by offering degrees to individuals who may not otherwise engage with higher education. With a widening participation student population who are predominantly BAME (Black, Asian, and Minority Ethnic), mature, the first in family to attend university and/or from disadvantaged areas. These students have often been out of education for a significant amount of time, many work part-time in addition to studying and/or have families and have been identified at our institution as more vulnerable to offers of 'assignment help'.

A common approach to detecting ghost writing focuses on the individual student's submission. Research conducted so far coupled with analysis of approaches adapted by individual institutions around the world provides academics with useful tips on what to look for when assessing student's work, for example: grade shifts, content of the submitted work, deviation from the assignment brief, vivas (QAA, 2017). Similar guidance has been published by the Australian Tertiary Education Quality and Standards Agency, which details a number of approaches that can be adapted to tackle the issue of contract cheating in higher education (TEQSA, 2017).

To better apprehend and prevent contract cheating at our institution, IT software was developed that allowed for a large-scale extraction of metadata from student assignments. Metadata for over 30,000 student assignments, submitted in various common file formats, such as, Microsoft Word (doc, docx), Adobe PDF (pdf) and Apache Open Office (odf), was collected across three terms and examined for patterns evidencing potential contract cheating, for example, a common source of authorship across multiple coursework pieces or evident authorship of publicly known ghost-writing agencies.

The collected data contained information on both original and editing authors of student assignments, including potential modifications and editing times. Examination of the dataset

helped to inform academic staff of submissions which required further scrutiny.

In addition to the metadata, students' IP addresses, attendance data, viva notes, performance trends and linguistic analysis were utilised to supplement the data, and build strong cases with layers of evidence. This analysis has helped us to formulate specific strategies to tackle the issue of contract cheating and to undertake a multifaceted approach, involving both education and detection.

For academic staff there has been training on a faculty-wide, departmental and individual level in order to better understand how to prevent, detect and investigate student work. Since this focus on training, there has been a 72% increase in proven cases which suggests that academic staff are more aware of academic misconduct and/or the training is effective.

The other core aspect of our work is to educate students in the importance of academic integrity. GSM's Academic Integrity working group, with representation from across the College, has been working on both fostering a sense of Academic Integrity and raising awareness of Academic Misconduct such as contract cheating. Our message has been one of staff and students united as an academic community to protect values of integrity and a commitment to learning.

A college-wide Academic Integrity campaign was launched in Spring 2018 which includes:

- Information and guidance sessions for students embedded in the curriculum (induction, personal tutoring, skills modules). It is crucial that principles of Academic Integrity are explained and shared with our students as soon as they start their higher education journey (For example, through Induction).
- A poster campaign of both students and staff holding self-penned statements related to hashtags [#defeatthecheat](#) and [#succeedwithintegrity](#). Both students and staff have an interest in maintaining the value of qualifications and are key stakeholders in this campaign.
- Development of a 'defeat the cheat' board game which aims to develop understanding of academic integrity as well as test the knowledge in various real life situations, which can be tailored to specific institution.
- 'Defeat the cheat' badges given out at various events (for example during the International Day against Contract Cheating) which are worn by both staff and students throughout the year.
- An Academic Integrity video designed and created by students.

Recommendations and next steps

The issue of contract cheating in higher education is highly complex and tackling it requires a continued collective approach to building integrity and a sense of community who recognise the value in learning, raising awareness, training staff and gaining public support. In addition, there is a need for new technology to assist institutions in detecting such practices and this technology needs to be able to adapt as contract cheating practices become more sophisticated.

Next steps for GSM include continuing to foster a sense of integrity and academic community, working with students to gain more insight into the risk factors associated with why



our student body resort to contract cheating. The results from the computer-aided metadata analysis so far has motivated the GSM team to further develop this tool.

Initial results are highly encouraging and it is hoped that the work completed to date and insights gained will contribute to the international discussion around contract cheating in higher education.

Keywords: academic integrity, contract cheating, essay mills, university cheating, contract cheating detection software.

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