

Yes, Contract Cheating Can Be Detected

Dr Thomas Lancaster

<http://thomaslancaster.co.uk>



**Keynote Presentation for
Eighth Annual Congress of Academic Integrity**

Universidad de Monterrey

24 September 2020

Imperial College
London





Dr Thomas Lancaster

Imperial College
London

Academic Integrity
Enthusiast

Profiling the international academic ghost writers who are providing low-cost essays and assignments for the contract cheating industry

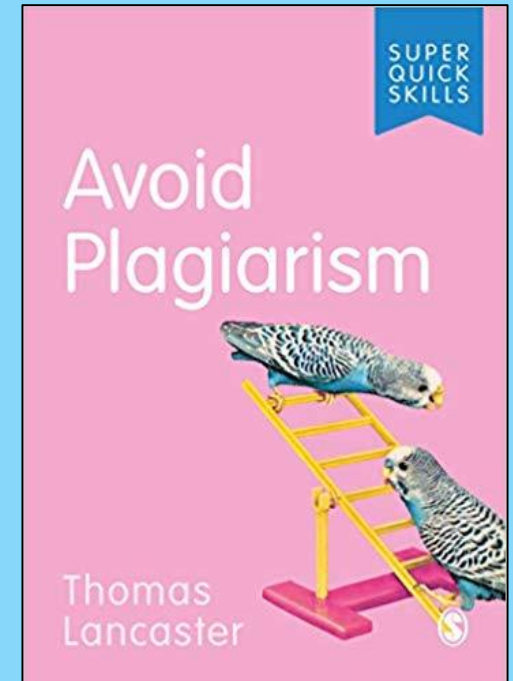
The Perceptions of Higher Education Students on Contract Cheating and Educational Corruption in South East Europe

Academic Discipline Integration by Contract Cheating Services and Essay Mills

I will pay someone to do my assignment: an analysis of market demand for contract cheating services on twitter

Academic Integrity for Computer Science Instructors

246 reasons to cheat: An analysis of students' reasons for seeking to outsource academic work



REMEMBER

Turn your computer off
before midnight on

12/31/99.



Then...

**“ We’ll never be able
to detect plagiarism**

Around 2000

Then...

~~|| We'll never be able
to detect plagiarism~~

Around 2000

Eliminating the successor to plagiarism? Identifying the usage of contract cheating sites.

Robert Clarke & Thomas Lancaster

essays & papers for students

CHEATHOUSE.COM



Welcome

Elizabeth Hall Associates deliver essays, dissertations, research proposals and journal articles; guaranteed high quality, confidential and secure.

EHA is the Premier UK Ghostwriting Service with clients worldwide, specialise in customised one-off academic writing not detectable by anti-plagiarism software.

1stCLASS HONS - BRAND, MARKETING, DISSERTATION, THESIS


Collage project -- E-COMMERCE B2C RETAILING SYSTEM FOR A NUTRITIONAL PRODUCT SALES COMPANY

Bid Request Id: 471012

From the original presentation on contract cheating in 2006

Eliminating the successor to plagiarism? Identifying the usage of contract cheating sites.

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Contract Cheating

A student pays or uses a third party to complete their academic work for them



Contract Cheating Providers

Oh God, I wish someone could write my essay for me and I could just hand it in tomorrow to score a 1st. If you have similar thoughts, take instant advantage of our 20% Discount NOW when you pay for an essay and place your order with an authentic UK essay writing service

Contract Cheating Requests

HELP WITH BUSINESS ECONOMICS FINAL ASAP

Hello,

I have my business economics final on Saturday, which is the 15th. I need someone to be on standby while I take my final. I will be taking the exam on my laptop and will be sending you pictures of the questions. My mother and grandfather recently passed away a week apart from each other so my grade has significantly gone down. I need at least an A. Please comment ASAP if you can help and we can discuss payment, thank you in advance.

Then...

~~|| We'll never be able
to detect plagiarism~~

Around 2000

Now...

**“ We’ll never be able to
detect contract cheating**

Around 2020

Yes, Contract Cheating Can Be Detected

Dr Thomas Lancaster

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INSPIRANDO TU MEJOR VERSIÓN

UDEM

Con integridad, conecta y transformo



turnitin

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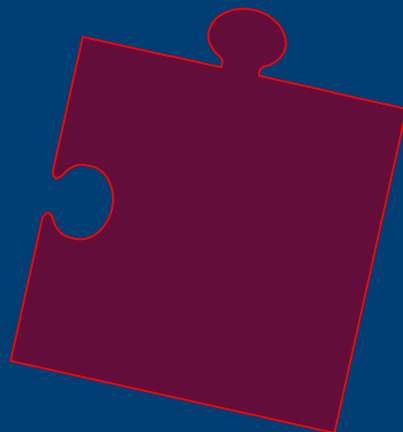
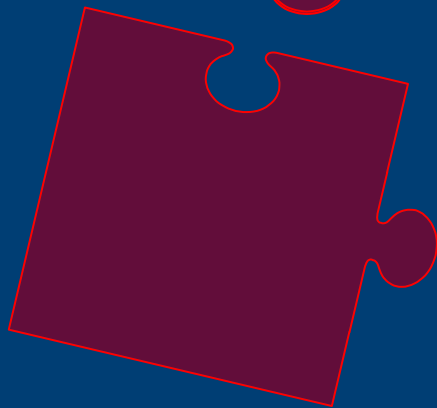
24 September 2020

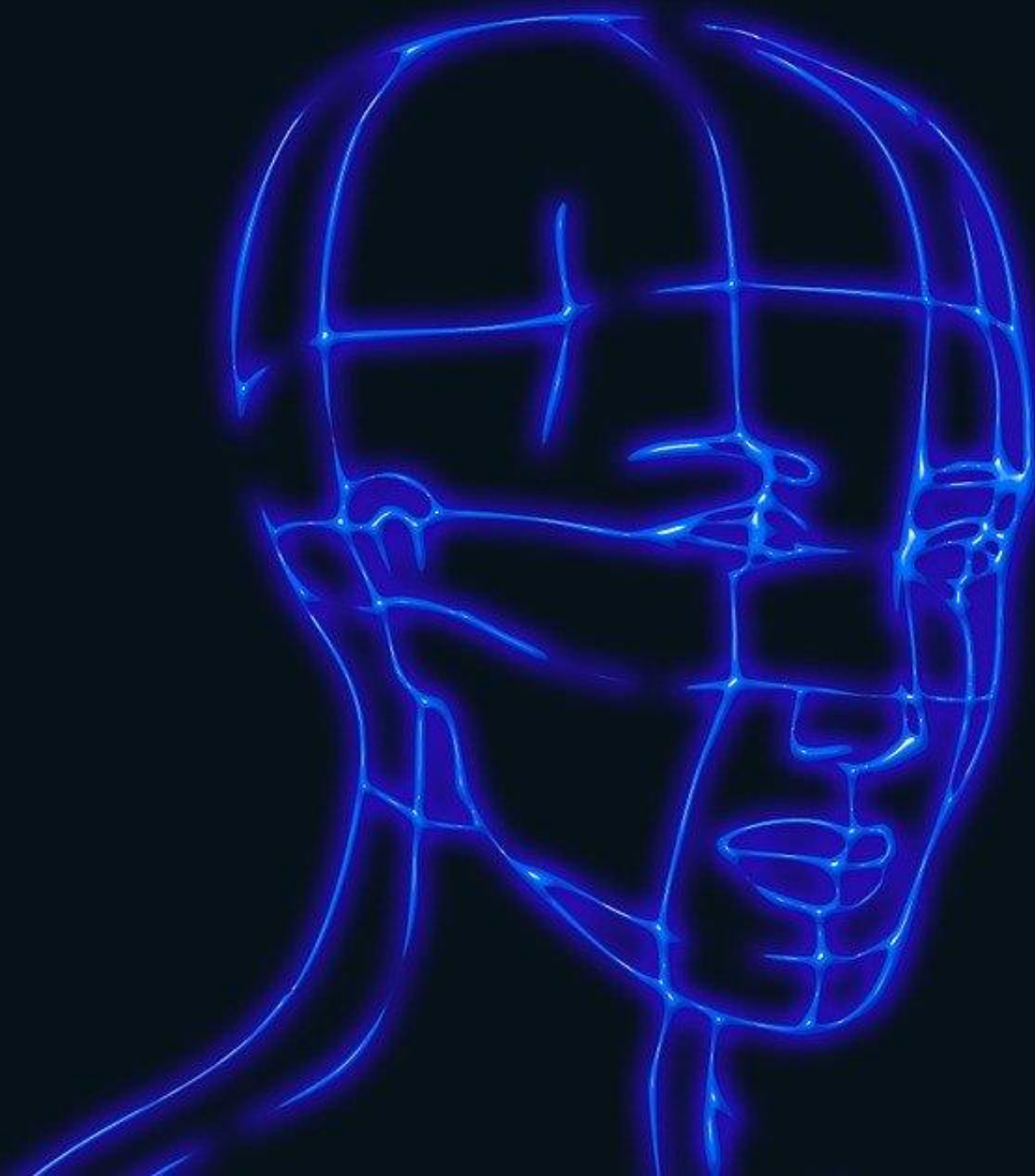
Imperial College
London



Detection
only one part of
the solution to
contract
cheating

is
part of





A Computer Problem



A Computer Problem

A Human Problem

“Unfortunately many people think [Turnitin is] the tool. If the only tool you have is a hammer, everything starts to look like a nail.”



Professor Fintan Culwin talking about contract cheating in 2007

Cross M. Policing plagiarism. *BMJ*. 2007;335(7627):963-964. doi:10.1136/bmj.39388.668773.47

**We are still at the
experimentation stage and
it will be some time until we
have a perfect solution for
detection**



**But lots of approaches show
promise**



Writing Patterns



How do you write?

What do you write?

Keystroke Analysis

If a student is considering options, we would see:

- Bursts of typing
- Pauses for thinking
- Subsequent editing



Is Tracking The Way Forward?

Slate

Inspection Summary

The document was accessed by 2 computers from 2 locations. Total time taken was 2 minutes. 99% of the words were copied from other sources.

Access Logs

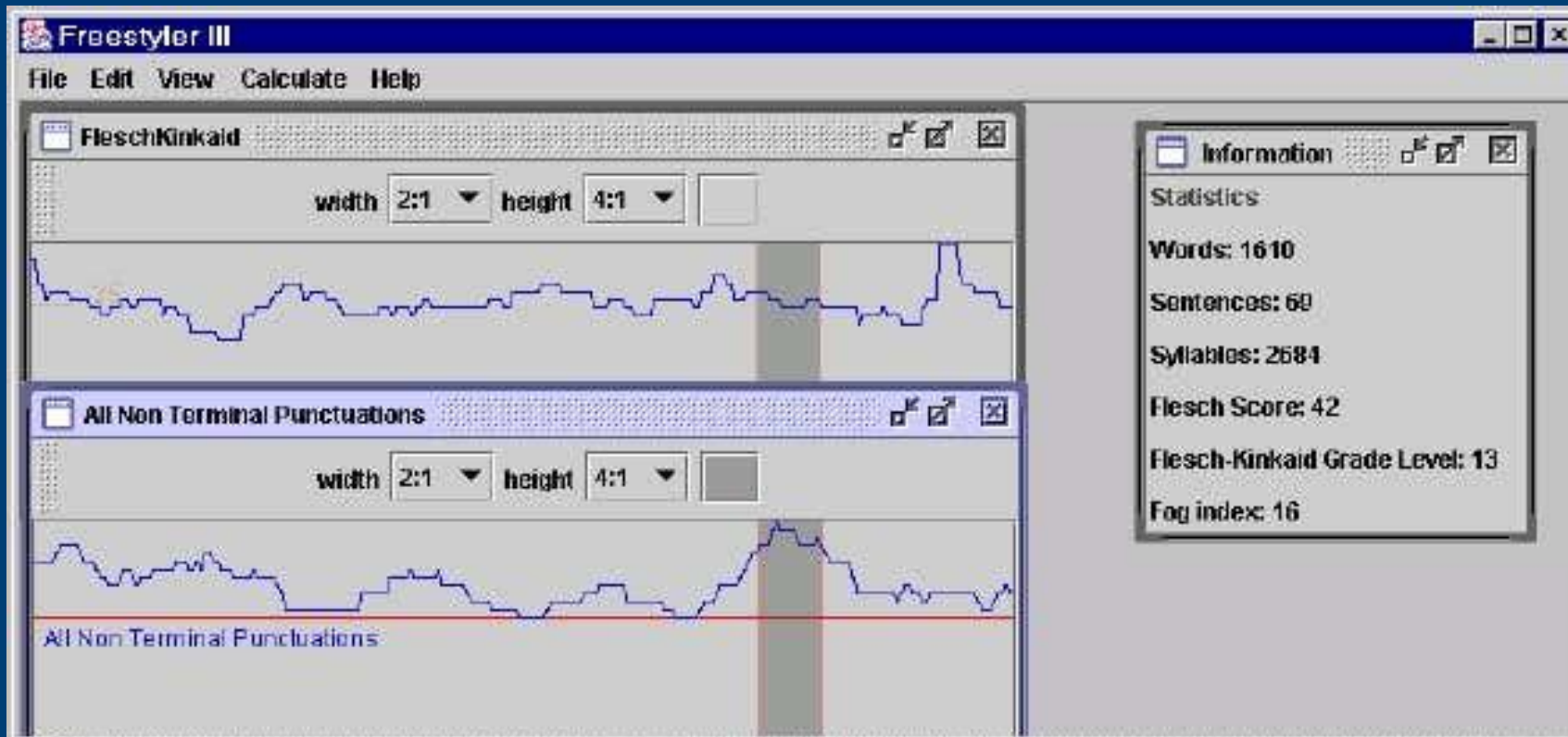
PC Name	Locations
HP ProBook 4530s (CNU20220KZ)	'New York, United States'
Dell Vostro(VSD139084)	'Karachi, Pakistan'

This software from Wasi Khan attempted to change the way students work

<https://youtu.be/14f5AnfTy0A>

Stylometry





In the early part of the millennium, we were investigating the stylistic properties of student documents

Culwin, F. & Lancaster, T. (2004). An Integrating Suite of Tools to Assist Investigation of Non-Originality. *Proceedings of Plagiarism: Prevention, Practice and Policy Conference*. Newcastle, UK.

2020 Work In Progress

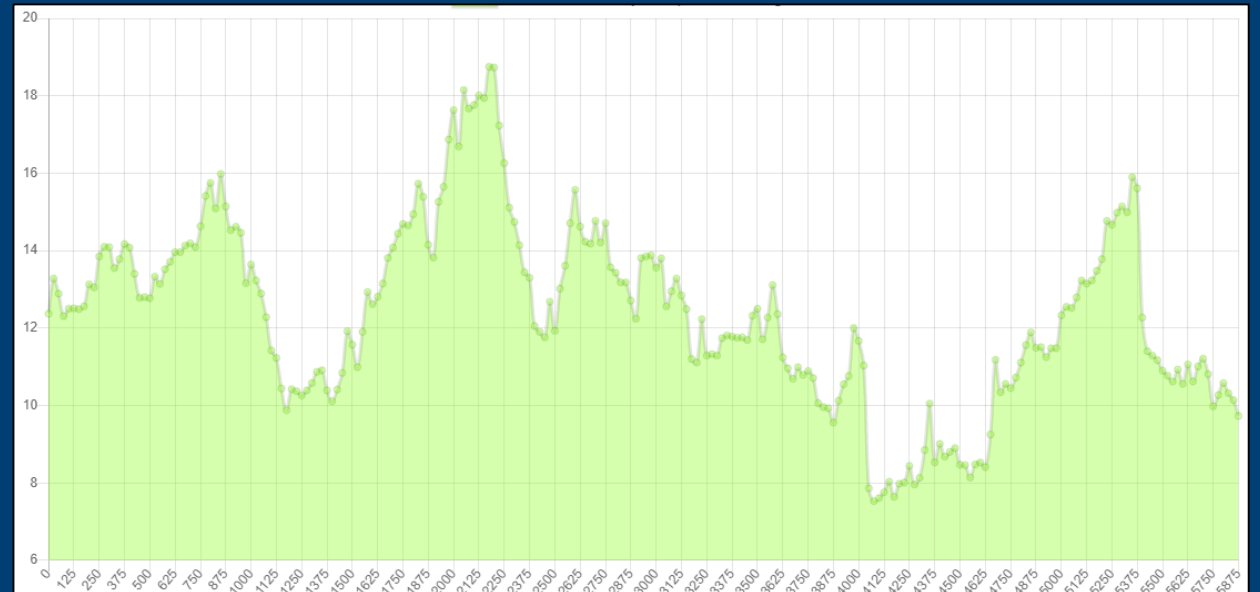
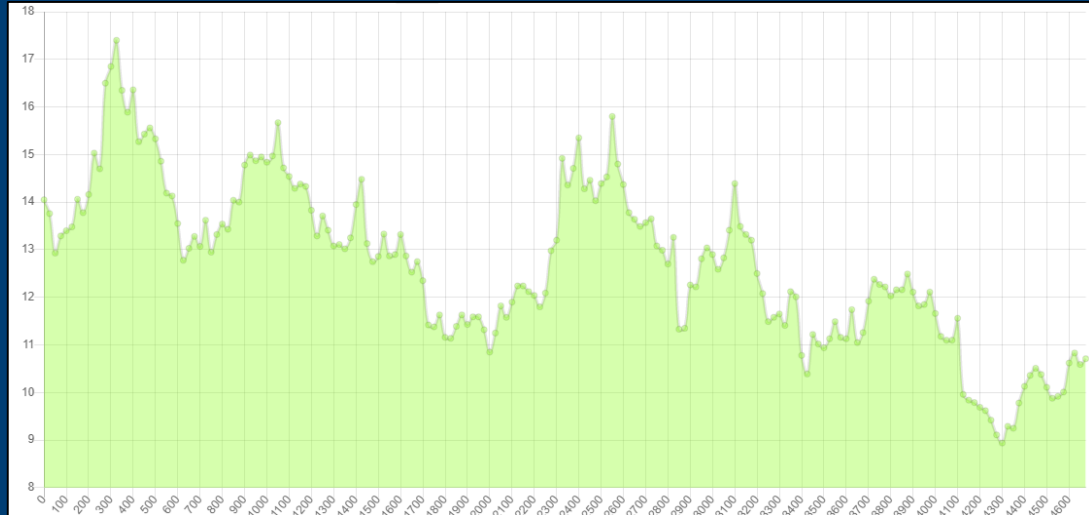
Are these two documents written by the same person?

Summary Statistics

Words: 4997
Sentences: 344
Mean Sentence Length: 14.53
Flesch Kincaid Grade Level: 11.23
Automated Readability Index (ARI): 11.18

Summary Statistics

Words: 6199
Sentences: 401
Mean Sentence Length: 15.46
Flesch Kincaid Grade Level: 11.32
Automated Readability Index (ARI): 11.1



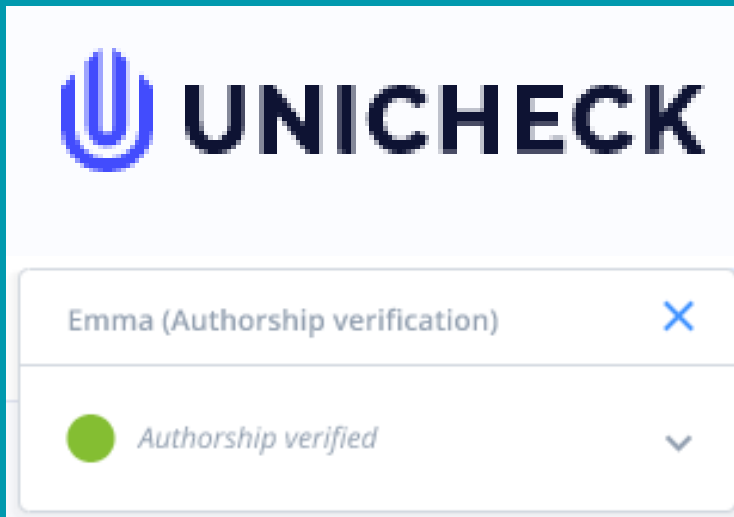
One way to detect contract cheating is to identify that two documents said to be written by the same person are actually written by different people



**Investigate
manually or with
linguistics
software**

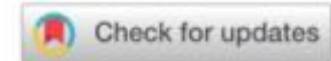


Commercial Alternatives



plus others in development

- Machine Learning
- Natural Language Processing
- Stylometry



Can software improve marker accuracy at detecting contract cheating? A pilot study of the Turnitin authorship investigate alpha

Phillip Dawson^a , Wendy Sutherland-Smith^{a,b}  and Mark Ricksen^c

^aCentre for Research in Assessment and Digital Learning, Deakin University, Melbourne, VIC, Australia;

^bSchool of Psychology, Faculty of Health, Deakin University, Burwood, Australia; ^cTurnitin LLC, Oakland, CA, USA

Dawson, P., Sutherland-Smith, W., & Ricksen, M. (2020). Can software improve marker accuracy at detecting contract cheating? A pilot study of the Turnitin authorship investigate alpha. *Assessment & Evaluation in Higher Education*, 45(4), 473-482.

Forensic File Investigation



Simple

Properties ▾

Size	45.3KB
Pages	20
Words	6576
Total Editing Time	1297 Minutes
Title	Contract Cheating
Tags	Add a tag
Comments	Add comments
Template	Normal
Status	Add text
Categories	Add a category
Subject	Specify the subject
Hyperlink Base	Add text
Company	Specify the company

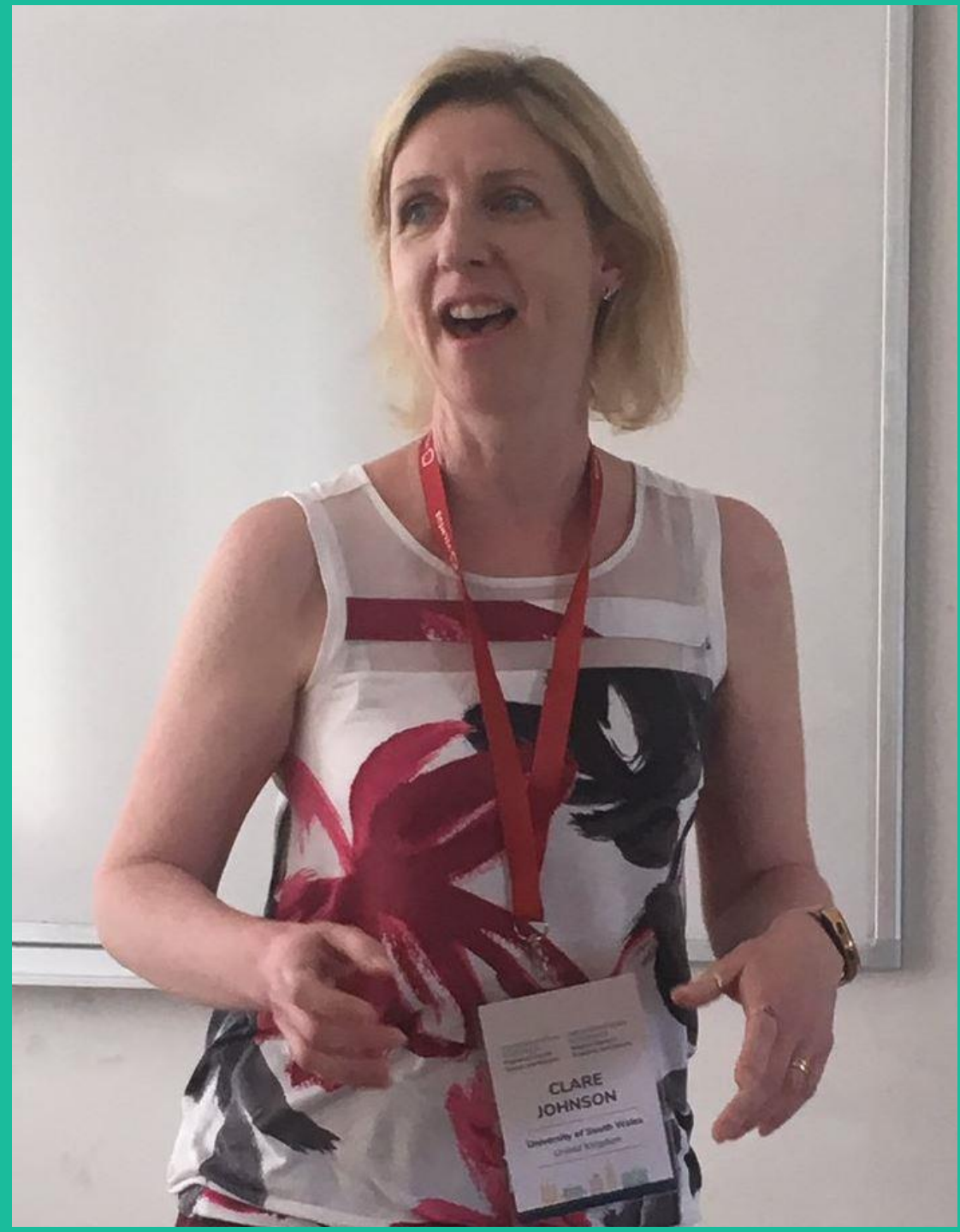
Related Dates

Last Modified	03/08/2020 11:03
Created	01/11/2018 09:08
Last Printed	

Advanced

Look at *document.xml* file
"Analyse Revision Save Identifiers"

Johnson, C., & Davies, R. (2020). Using digital forensic techniques to identify contract cheating: A case study. *Journal of Academic Ethics*, 1-9.



Do students know what they've written?

Ask them questions

Ask them to make modifications

Cloze Procedure

If I wrote this _____, I should be able _____ work out what words _____ missing.
If instead I _____ cheated, the task will _____ much harder.

Taylor, W. L. (1953). "Cloze procedure": A new tool for measuring readability. *Journalism quarterly*, 30(4), 415-433.

Implementation from <https://projects.ncsu.edu/cals/gn/5thword.html>

Commercial Alternative

Auth+
(more
machine
learning)

- Does the student recognise their own writing style?
- Can the student complete their own sentences?
- Can the student identify what they wrote?



~~A Computer Problem~~

A Human Problem

Look For Your Assignments Online

**DOCTOR WANTED TO MAKE A
LOCALIZATION CHART IN EXCEL. ONLY
FOR DOCTORS :) -- 3
BUDGET \$10-30 USD**

[Freelancer](#) › [Jobs](#) › [Medical Writing](#) ›

DOCTOR WANTED TO MAKE A LOCALIZATION CHART IN EXCEL. ONLY FOR DOCTORS :) – 3

I need a doctor who can do the following:

In an excel file, in column A make a list of ALL points to be checked in a comprehensive neurological exam of the nervous system. Everything must be there, no glossing over.

Columns B, C, D, to whatever:

List all the different different STROKE SYNDROMES, and other diagnoses in a localization centric manner

Then write the findings that are expected in each location. This should cover everything from cerebral cortex to muscle fiber :)

And it should be accurate.

If you are not an experienced medical professional please don't infuriate me with a junk bid that is bursting with flowery language and bluster.

Budget \$50 per section (brain, spine, neuromuscular, miscellaneous)

Skills: [Medical Writing](#), [Academic Medicine](#)

Look For Indicators

Do you know the student? Could they have written this?

Is the work generic or repetitive?

Does this use sources the student wouldn't know about?

Is the originality level too low?

Investigating Contract Cheating and Breaches of Academic Integrity



Dr. Thomas Lancaster
<http://thomaslancaster.co.uk>

Staff Development Workshop Held At
Deakin University
Tuesday 5 June 2018

#contractcheating
@DrLancaster

Slide 1



<https://www.slideshare.net/ThomasLancaster/investigating-contract-cheating-and-breaches-of-academic-integrity-deakin-university-australia-5-june-2018>

Useful Checklists

Contract-cheating: some things to look for.

Here is a list of pointers that can help to differentiate ghost-written (i.e. contract-cheated, commissioned) assignments from those where students have copied or colluded.

As a starting point... An assignment has caught your attention because it somehow doesn't look right but might not be showing the usual Turnitin/other indicators of plagiarism. So, from there, noting that some of these can arise as a result copy-and-paste plagiarism.

1. What is the Turnitin similarity score – or equivalent – with references excluded?
 - If it is anomalously/atypically low, e.g. 0-1-2%, then that can be an indicator that an essay-mill or ghost-writer has taken care to make the assignment "plagiarism free", "Turnitin proof", or similar, as many essay-mills advertise.
2. Check the references. Are these presented in Harvard (or other) referencing style as you indicated or would expect? Are all the references focused on the assignment or are they "generic" on the general subject area rather than specific to the core matter of the assignment?
 - Different reference format, particularly if the references themselves are correct and consistently presented, can indicate a ghost-writer has adapted a previous assignment or taken a previous reference list "from stock".
 - Generic references can indicate a ghost-writer has adapted a previous assignment "from stock".
3. Does the assignment focus on the assignment brief or is it (well-written) "generic", addressing the general area but missing the specific focus of the assignment?
 - Generic and not-quite-meeting the assignment brief can indicate a ghost-writer has adapted a previous assignment "from stock".
4. Is the assignment written in the right 'voice'? Is the style and level of the assignment as expected for a student at that stage of their course or, for example, does it look like an undergraduate assignment that's been written by someone with a command of the subject more aligned with postgraduate qualifications or equivalent?
 - Inappropriate 'voice' can indicate a ghost-writer has written the assignment.

<https://www.northampton.ac.uk/wp-content/uploads/sites/2/2018/02/Contract-Cheating-Some-things-to-look-for.pdf>

Substantiating contract cheating: A guide for investigators

Key principles

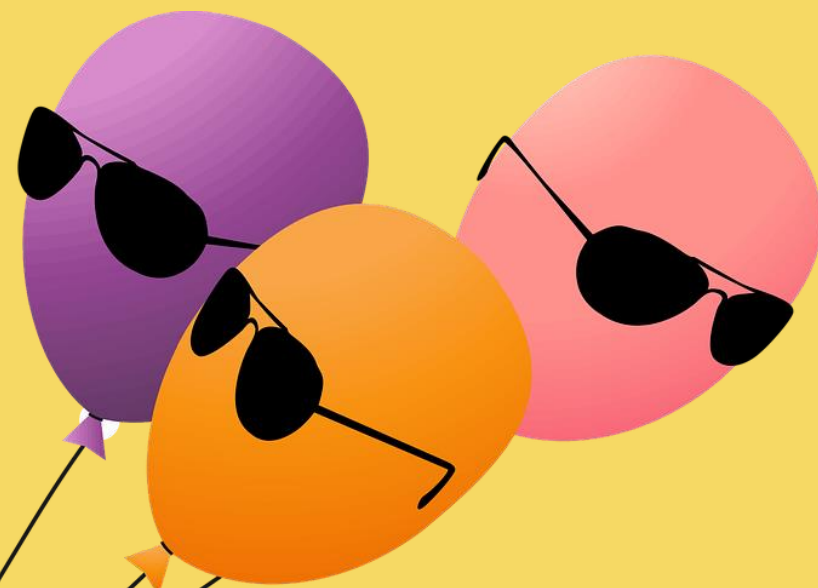
1. Educate: Ensure all staff, particularly markers and unit/course coordinators, are aware of the signals that can indicate contract cheating and, thus may be a cause for suspicion (see following pages)
2. Investigate: One or two signals do not provide enough evidence to substantiate cheating, but can provide cause for further investigation.
3. Use policy: Refer suspected cases of contract cheating to an appropriate investigator and decision-maker, as per your institution's relevant policies.
4. Not 'proof, but 'balance of probability': Investigate suspected breaches as a lay proceeding, using the standard from civil law, where the 'balance of probability' is the relevant test to which allegations must be subjected. The balance of probability is based on 'clear and convincing evidence' that it is more likely than not that the allegation is true. This is less demanding than the criminal law test of 'beyond reasonable doubt'.
5. Examine: Look carefully at each aspect of the document and other relevant sources of evidence. Identify every aspect that is cause for concern.
6. Collect evidence: Accumulate a range of evidence that clearly and convincingly establishes the firm belief that the breach in question is not only probable, but highly probable. Three forms of evidence are critical:
 - a. Textual and electronic evidence from the suspected assessment
 - b. Knowledge of the student's academic and linguistic abilities
 - c. The student's previous assessment work

<https://www.teqsa.gov.au/sites/default/files/substantiating-contract-cheating-guide-investigators.pdf>

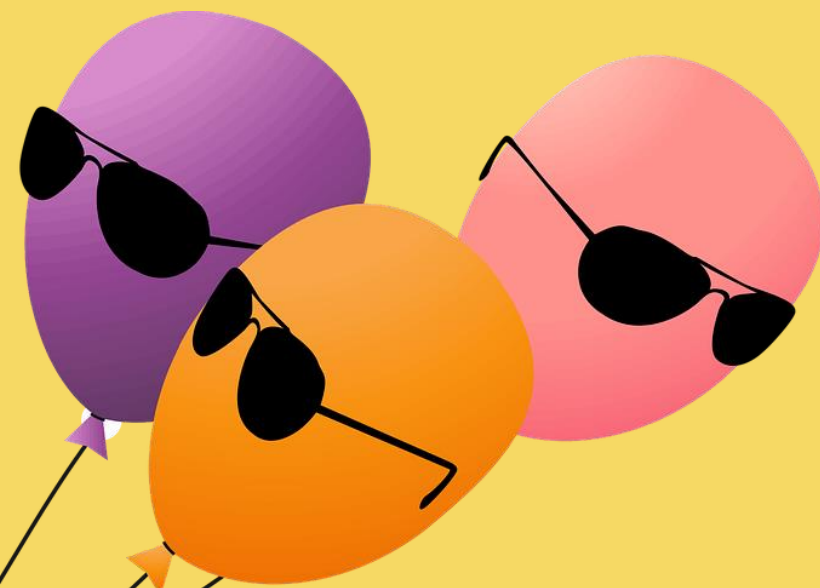
academic integrity

TEQSA

Be Suspicious!



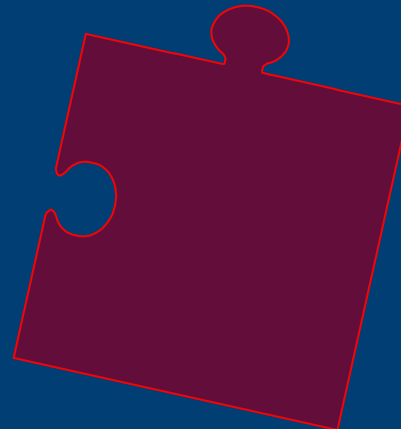
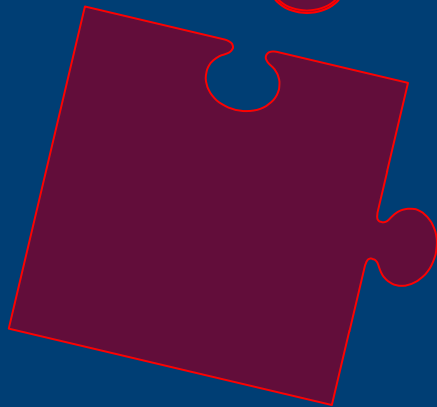
Be Suspicious!



But trust and listen to students

Detection
only one part of
the solution to
contract
cheating

is
part of



New challenges to academic integrity will always appear!





Estee Stimler
@EsteeStimler

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My Website: <http://thomaslancaster.co.uk>

My Blog: <http://thomaslancaster.co.uk/blog>

My LinkedIn: <https://uk.linkedin.com/in/thomaslancaster>

My Twitter: [@DrLancaster](https://twitter.com/DrLancaster)

Slide Archive:

<http://www.slideshare.net/ThomasLancaster>

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8.º CONGRESO DE INTEGRIDAD ACADÉMICA

Con integridad, conecta y transforma

En Colaboración con:
EAFIT
UNIVERSIDAD PANAMERICANA
Tecnológico de Monterrey

turnitin