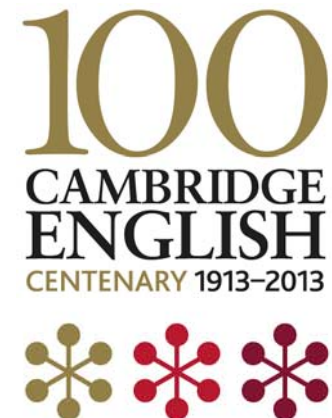


# Detecting Cheating and Plagiarism

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# Overview

- Introduction
- Plagiarism
- Cheating
  - What, Where, How
  - Consequences
- Detection
- Policies
- School Collusion



# Plagiarism

- Plagiarism is a special act of cheating associated with essay writing
- According to Webster's Third New International Dictionary, plagiarize means

*'to steal and pass off as one's own (the ideas or words of another) or use without crediting the source.'*

It goes on to say that it is *'to commit literary theft.'*



# Plagiarism

- The problem with plagiarism is twofold:
  - a) it involves firstly stealing someone else's work
  - b) and then lying about it.



# Plagiarism

Although plagiarism is a serious offence in academic context, its nebulous boundary with copying (legitimate) is not always a clear cut.



# Guidelines about what counts as plagiarism

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation



# Guidelines about what counts as plagiarism

- changing words but copying the sentence structure of a source without giving credit
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not



# Facts about Plagiarism

- Cizek (1999) reviewing a large body of survey and experimental research, states that *'nearly every research report on cheating... has concluded that cheating is rampant'*. Cizek reports that about 40 percent of sixth graders copy and that about 60 percent of undergraduates do so at some point during their college careers. Cheating can significantly compromise the assessment process (Cizek, 1999; Frary, 1993).





# Facts about Plagiarism

- These percentages have significantly increased with easier accessibility of internet and online resources, which exposes the Higher and Further education institutions with even higher widespread electronic cheating
- Online plagiarism has turned into a profitable industry
- Millions of online essays are available to students
- Detection of plagiarism is an impossible task for individual faculty members



# How to detect Plagiarism

- The increase in online cheating brings about the need for the availability of online detection solutions
- Many colleges and higher education institutions now use commercial online detecting software tools to check the originality of an essay
- Examples: Turnitin ([turnitin.com](http://turnitin.com)), Dupli Checker ([duplichecker.com](http://duplichecker.com)), iThenticate ([ithenticate.com](http://ithenticate.com)), WriteCheck ([writecheck.com](http://writecheck.com)) and AntiPlagiarism.net ([antiplagiarism.net](http://antiplagiarism.net))



## ABC News Poll

1 in 3 they  
themselves  
have cheated.

Rising to 43%  
of older teens.

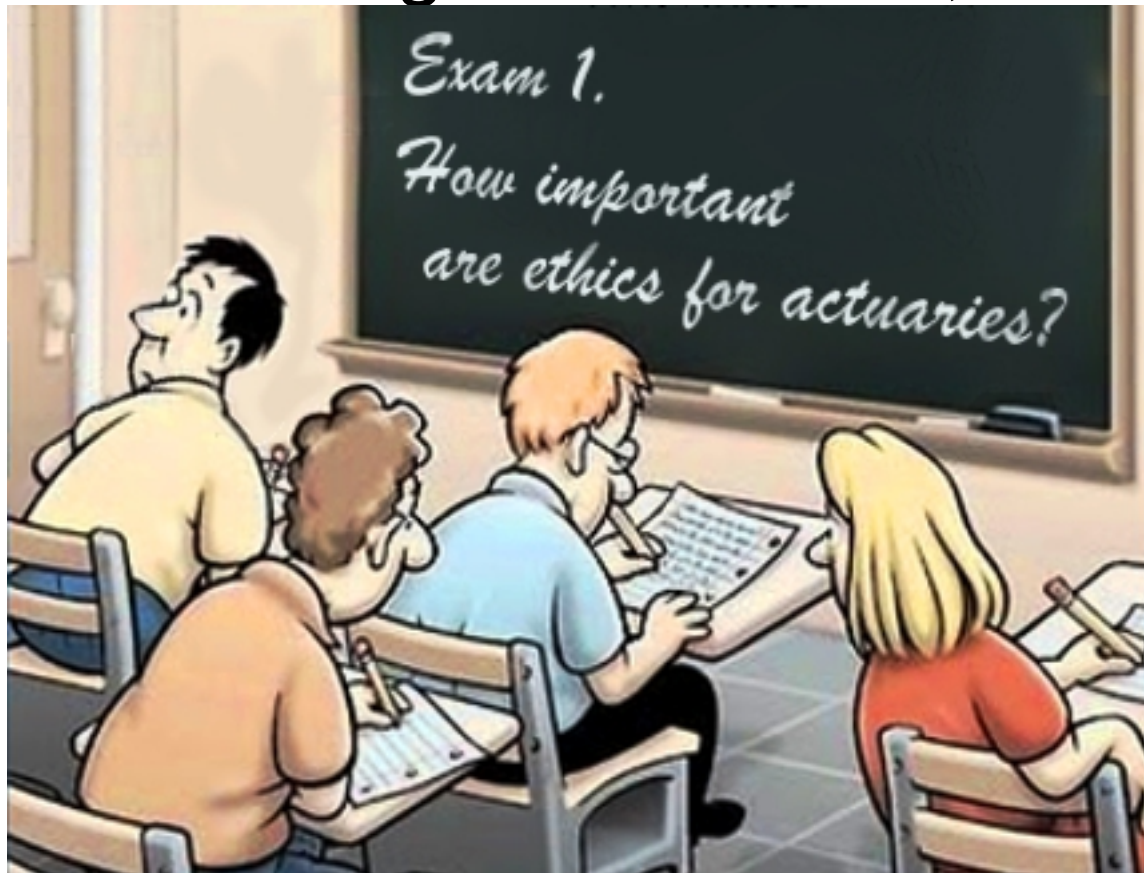
Most say  
cheaters don't  
get caught.





# What is Cheating?

*“Any action that violates the rules for administering a test” Cizek, 1999:3*

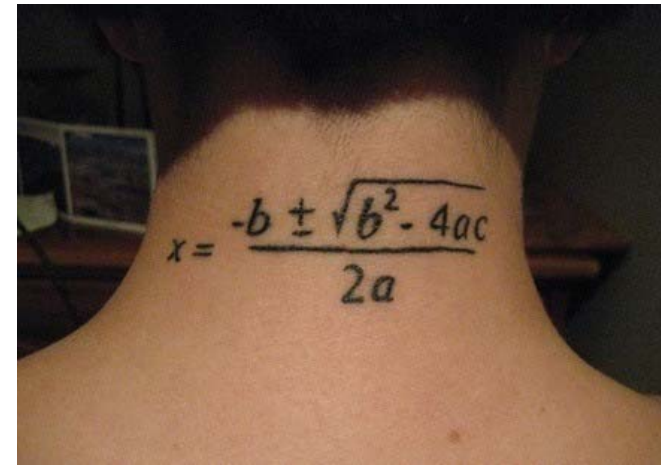






# Where does it happen?

– It can take a variety of forms



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# Text Messaging

Examinee can ask questions and get answers from friend during test via text messaging.





## iPod

Song names are renamed with notes or test answers for viewing on the screen.

Text files can be stored.

Audio notes can be stored.

Video notes can be stored.





# Calculator

Notes are entered into calculators that have memory for storing notes.







## Camera Phone

Examinee takes pictures of a test with a camera phone and sends picture to another person who can text message correct answers back.





## Why does it happen?

- Material rewards such as
  - Access to life chances
  - Competitiveness
  - Lack of self confidence
  - Publication of league tables (Schools)
- Cheating culture
  - Collective cheating
  - Cracking the code



# What is at stake?

- Threat to test validity
- Score obtained by fraudulent means is not valid
- Has negative impact on the validity of scores obtained by other candidates
- Denying opportunities to others
- Where cheating is seen to be widespread, even honestly obtained test results may lose credibility and certificates become devalued



# Standards for Prevention of Cheating

Explicit statements in the Standards for  
Educational and Psychological Testing  
(1999)



# Standards for Prevention of Cheating

1. Protect the security of tests (standard 11.7)
2. Ensure that individuals who administer the tests are proficient in administration procedures and understand the importance of adhering to directions provided by the test developer (standard 13.10)
3. Inform examinees that it is inappropriate for them to have someone else take the test, for them to disclose secure test materials, or engage in any other form of cheating (standard 8.7)

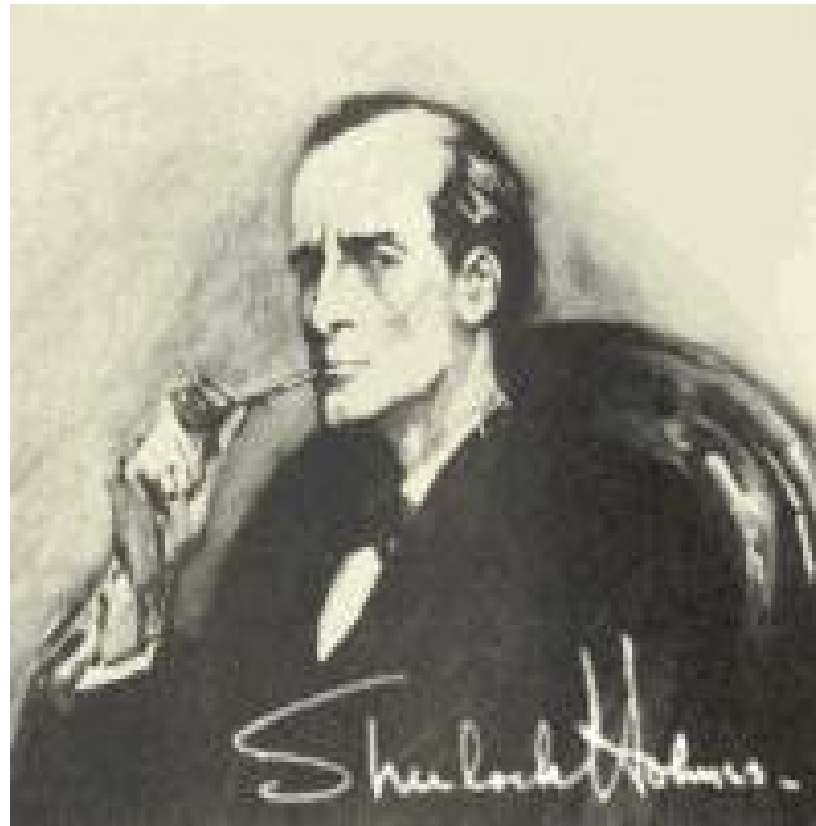


## Standards for Prevention of Cheating

4. Ensure that test preparation activities and materials provided to students will not adversely affect the validity of test score inferences (standard 13.11) and
5. Maintain the integrity of test results by eliminating practices designed to raise test scores without improving students, real knowledge, skills, or abilities in the area tested (standard 15.9)



# How to detect Cheating?





# Statistical methods for collusion detection

- There are numerous statistical techniques to detect test collusion
  1. Classical Test Method (CTT)
  2. Item Response Theory (IRT)





# Statistical methods for collusion detection: CTT

- Many existing techniques are modelled using CTT
- They are designed to compare the response pattern similarity between examinees with an expected amount of similarity.
- CTT item statistics are dependent on the trait levels of all examinees.



# Statistical methods for collusion detection: CTT

- The response pattern of each examinee is usually compared with the response patterns of every one in the group who took the test including those, who are not within the physical copying distance. Thus, biased estimates of the expected number of matches between a pair of examinees are obtained



# Statistical methods for collusion detection: IRT

- The alternative method is the use of IRT
- Different IRT models depending upon test format/method:
- Example: a Nominal response model used for MC
- The probability of an examinee answering an item correctly given an estimate of his or her ability is independent of the other examinees taking the test.



# Statistical methods for collusion detection: IRT

- IRT detection models take into account the item parameter of the test: difficulty level of the items and discrimination indices of the alternatives or choices of the test



# What are we looking for?

- Looking for unusually high scores on one measure in relation to others
- Looking for identical/similar pattern of responses: copying or collusion
  - Grouping candidates on some meaningful criterion, i.e., the seating plan, class membership, school, etc.
- See van der Linden (2011) and Geranpayeh (forthcoming) for a list of psychometric techniques



# Policies on punishment

- Once a cheating is detected, an action has to be put in place to
  - Stop fraudulent use of test results
  - Deter future cheaters
- Punishment is dependent on the level of cheating, which in turn can depend on 5 levels of cheating detection
  - Individual candidates, Group of candidates, School collusion, Test Centre collusion and Widespread cheating



# Level of punishment

- Withdrawing results/certificate (individual)
- Re-taking the exam (suspect results)
- Life Ban (if stakes is high or imposters)
- Informing stake holders (regulator)
- Legal action (insider)



# School collusion

- Students implicated may not have been involved in the cheating
- Whilst the candidate's results may be cancelled if school was to be blamed, no further action will normally be taken against candidates





# School collusion: Atlanta case

- Biggest US cheating scandal in US History
- Cheating detected on a 2009 standardized state test involving 178 teachers and principals, 56 schools investigated cheated, 43 people were indicted
- Georgia Governor determination to trace its source
- Cheating traced back to 2001



# School collusion: Atlanta case

- The scandal testifies that cheating is no longer seen as an old-fashioned battle between teachers and students
- When the stakes are high, teachers would also be willing to cheat



Atlanta:  
It's O.K. to  
Beat up  
Teachers!

Violence  
Reigns in  
Atlanta  
Schools!

Atlanta:  
Still A  
Gangsta  
System!





ArdeshiR  
2009



Thank you for listening



# Issues to Consider

- Gain & Punishment proportion
  - Impact on test validity/integrity
  - Reputation of the test
- Social context: plagiarism
- Raising Awareness
- Public statement
- School collusion