Students' Understanding of Plagiarism and Collusion and Recommendations for Academics

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Abstract:- Plagiarism and collusion are forms of academic misconduct. In academic institutions, plagiarism is on the increase and with the ready availability of information though the Internet and *essay mills*, it is becoming an issue of concern. Although, plagiarism and collusion are regarded as academic offence with severe penalties, a large number of students are still committing this offence, sometimes with intent. This paper discusses how and why some students plagiarize, collude or collaborate (when collaboration is not allowed). It also details different forms of plagiarism and reports the results of an experiment to understand students' understanding and perceptions. A questionnaire was constructed with a number of simple scenarios and students were asked to determine whether they were instances of plagiarism, collusion or collaboration. Results show that whereas students think they know what plagiarism is, they cannot always identify it when presented with different scenarios. The paper also mentions a number of plagiarism detection tools and suggests strategies for the lecturing staff to adopt - to deter students from submitting plagiarized work.

Key-Words:- Plagiarism, Collusion, Collaboration, Cyber plagiarism, Contract cheating.

1. Introduction

Plagiarism is a form of cheating and *academic misconduct*. It refers to the following:

- Copying information verbatim
- Presenting someone else's idea without referencing
- Paraphrasing someone else's writing
- Providing incorrect references with the intention of cheating
- Collusion.

Maurer et al [1] provide three main categories of plagiarism as:

- Accidental: due to lack of knowledge of plagiarism or a lack of an understanding of the need for correct referencing.
- Unintentional: knowing what plagiarism is, however, not realizing that work produced could be considered as plagiarized or collaborated
- Intentional: a deliberate act to deceive.

Collusion is an agreement between two or more people to deceive or mislead to gain an unfair advantage. In case of students, this refers to 'working together' when they are not permitted to work in groups, especially for the purposes of the assessments. This is another form of plagiarism.

Plagiarism and collusion are becoming issues of concern at educational institutions. Although, not every student submits plagiarized work, instances of plagiarism are increasing with time. One reason is the readily available information through the Internet as well as the availability of essays and course work through *essay mills* or *paper mills* from websites such as CourseWorkBank.co.uk, Coursework4U.co.uk and UKEssays.com [2]. A number of auction sites are also available on the Internet, e.g. RentACoder, BizReef and GetACoder [3-5], which act as brokers between clients (in this case, students) and contractors (specialists in the area). These are out-sourcing websites, providing a legitimate service. However, when students use these sites and purchase material to submit as their *own work*, then we have a problem.

A survey conducted by Freshminds recruitment consultancy and presented at a UK conference [9, 10] reported that a quarter of students had submitted plagiarized work from other sources: 9% of students had submitted plagiarized work once and 16% of

them submitted such work more often.

In this paper, we first discuss, in Sections 2 and 3, why and how students plagiarize. In Section 4, we present an experiment to understand students' perceptions. Plagiarism detection tools are briefly mentioned in Section 5 and Section 6 provides a number of recommendations for the academic staff. Conclusions are presented in the final Section 7.

2. Why Students Plagiarize

There are several reasons why some students plagiarize. In some cases, this is due to ignorance of what plagiarism or collusion is or what the penalties are. Often students, especially international students, do not see anything wrong in *copying* others materials. They do not understand the requirements of proper citation or correct referencing and do not distinguish between paraphrased and plagiarized text. Often they do not even know that academics regard plagiarism and collusion as a serious offence. Although, ignorance is not an excuse, various studies and academics' own experience confirm this [6-8, 11].

Sometimes, there is too much pressure of work for students to submit several assignments roughly at the same time, especially towards the end of a semester, and thus there is a temptation to collude or plagiarize. Studies have also shown that 47% students think they can plagiarize and yet get away with it [11]. Students understand that it is sometimes difficult, often impossible, to detect if plagiarism has taken place especially if there is an instance of contract cheating. Clarke and Lancaster [7, 12] have surveyed the situation. They collected 912 cases of contract cheating, over a 30-month period from March 2004 to October 2006, and noted that:

- 50% of these originated in the USA and 26% were from 46 higher education institutions in the UK [13].
- An 'average' student posted requests for between 4-7 assignment work.
- The majority of these requests were for programming and database solutions or for projects (including MSc projects).

A general lack of confidence in one's writing abilities, especially in case of students from non-English speaking countries is another reason for plagiarizing or contract cheating. A huge pressure to get good grades is another reason. Information readily available on the Internet as 'public property' can be a temptation to get 'help'.

3. How Students Plagiarize

One common approach is to copy and paste the material from other sources, including internet, and make subtle changes and present it as their own. However, there is now a new phenomenon commonly known in academic circles as *Contract Cheating*. The term *contract cheating* was coined and first used in 2006, by Thomas Lancaster and Robert Clarke [6-8] from the Birmingham City University, UK. They define contract cheating as *submission of work by students for academic credit, which the students have paid contractors to write for them* [6]. Here, what students submit as their own work is, in fact, produced by someone else. This approach is becoming popular with some students. Usually, a fee is paid for the *service* but not necessarily.

The way the contract cheating process operates is discussed in the following paragraphs. In the following scenarios, students (who need some work to be done) are referred to as *clients* and the persons, companies or websites (who produce deliverables for students) are referred to as *contractors*.

3.1 Scenario 1: Using friends and family

In this case, the contractor is someone who knows the topic well and can produce the product (e.g. a computer program, a database system, a report, or an essay). In this case, the contractor is someone close to the client (i.e. the students) and, therefore, may or may not accept the payment.

3.2 Scenario 2: Using discussion forums

In this scenario, the client posts a note on a discussion forum and asks for help. The help may be in the form of an answer to a question or in the form of a small product e.g. a very small computer program. The help is voluntary and, therefore, the person extending the help will not spend too much time on the question or the client's requirement.

However, the client may well be pointed to other sources, which may become potential sources for plagiarism or contract cheating.

3.3 Scenario 3: Using tutorial sites

These sites provide freely downloadable tutorial help. It is not possible to detect plagiarism if someone copies information from these tutorials, and submits without due acknowledgement, unless a software tool such as TurnItIn [14] is used.

3.4 Scenario 4: Using bespoke essay sites

A number of *essay banks*, also known as *essay mills* or *paper mills* are available on the Internet e.g. Coursework4U.co.uk, CourseWorkBank.co.uk and UKEssays.com [2]. These sites, which are proliferating with time, provide what is known as *ghostwriting* services and specialize in the sale of essays. They would provide coursework, write essays or develop program code for a fee. They would be happy to do and sell assignment work for customers – in this case, students. Such businesses are operating totally legally and they are simply selling goods, in this case essays, reports and coursework.

3.5 Scenario 5: Using auction sites

A number of auction sites are available on the Internet e.g. RentACoder, BizReef and GetACoder [3-5]. These sites act as brokers between clients and contractors. The clients post requests for work to be done and contractors (specialists in the area) place bids to win the contracts. The contractors also post the prices, they would charge for the work. If a contractor is selected, the client would pay the agreed price (which is, initially, kept by the auction site) and the contractor will begin working on the project. When the work is complete and delivered, the auction site will release the money to the contractor. If the work is not delivered, the money is refunded to the client. These are very well managed out-sourcing websites, operating legally and providing a legitimate service offering freelance project work (reports, essays, program code, database design, website design, etc) to individuals and industry. Well-established sites such as RentACoder, BizReef and GetACoder [3-5], have even ratings for their members for prompt payments (in case of clients) and for quality of service (in case of contractors).

4. Experiment

An experiment was conducted in the autumn semester of 2008 to find out if students understood what plagiarism was and whether they knew the difference between plagiarism, collusion and collaboration. A questionnaire was designed with 6 simple questions. Students were asked to define plagiarism, collusion and collaboration and comment on given scenarios to determine whether these were instances of plagiarism, collusion or collaboration. The target audience was 47 final year students of undergraduate programmes in Computing. They were asked to fill in the questionnaires during one of the lecturing sessions. There was no requirement for students to write their names on questionnaires so there was no way to find out who said what. Students were asked to be honest in their answers to questions so that the analysis presented a correct picture.

The following sections present the questions asked as well as the results obtained [22].

4.1 Questions 1 and 2:

The first question was in three parts and asked students the following:

- Do you know what is plagiarism?
- Do you know what is collusion?
- Do you know what is collaboration?

There were three possible answers to each of the above: *Yes*, *No* and *I think I know*.

- 1 student (2%) did not know what any of these terms meant.
- 17 students (36%) answered these questions in affirmative (ie Yes, Yes, Yes).
- 2 students (4%) said *they think they know* what the terms meant.
- 14 students (38%) said they knew what is meant by plagiarism or collaboration but they were not sure of what collusion meant.

- 9 students (19%) said they knew what plagiarism meant but they did not know or they were not too sure of what the other two terms meant.
- 1 student (2%) knew what collaboration meant but was unsure of the other two terms.

Referring to Figure 1, we note very clearly that students are not too sure as to what collusion means. Overall, we find that:

- 14 students defined plagiarism satisfactorily.
- 3 students defined collusion reasonably satisfactorily.
- 2 students defined collaboration reasonably satisfactorily.

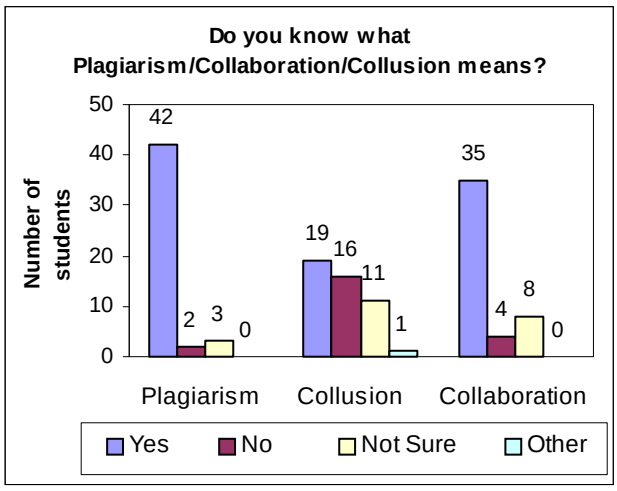

Figure 1: Understanding of plagiarism, collusion and collaboration

Referring to Figure 2, it is clear that students have not provided a satisfactory definition of the terms Collusion and Collaboration. Overall, we find that:

- 40 students (85%) defined plagiarism satisfactorily.
- Only 7 students (15%) defined collusion satisfactorily, 24 students (51%) defined it incorrectly and 16 (34%) did not respond.
- 15 students (32%) defined collaboration correctly, 13 students (28%) defined it incorrectly and 19 (40%) did not respond.

Further analysis of the answers given by the 42, 19 and 35 students, who said they know what plagiarism, collaboration and collusion is (refer to Figure 1), we find that only 39, 5 and 8 students defined the terms correctly, as shown in Figure 3.

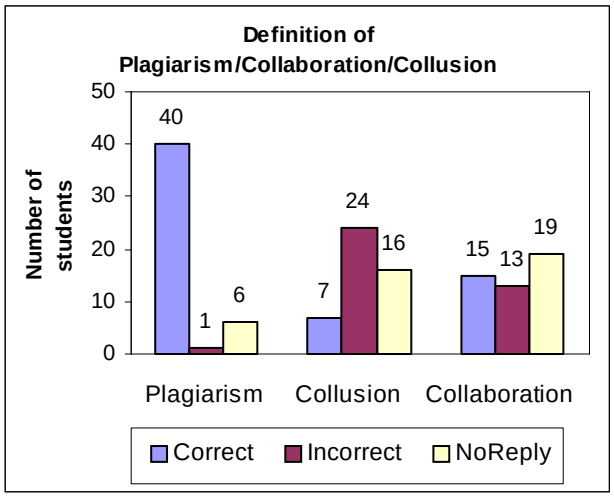

Figure 2: Definition of plagiarism, collusion and collaboration

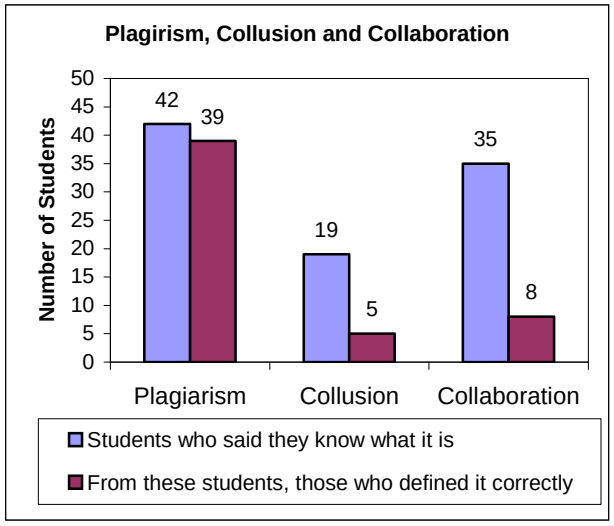

Figure 3: Understanding and definition of plagiarism, collusion and collaboration

Our study shows that overall 85-89% of the students know what plagiarism is. This figure is slightly better than 75% quoted by King [11] who investigated the perceptions of international students only. For our study, the majority of students were from the UK - their first language being English.

4.2 Question 3:

Question 3 presented five simple generalized

scenarios (no more than three lines of text in each case) and students were asked to say whether these were instances of plagiarism, collusion or collaboration. Here is the summary of results as presented in Figure 4:

- Only one student (from a total of 47) provided correct answers in each case.
- 9 students (19%) gave the correct answer to scenario-1, which was an example of plagiarism.
- 11 students (23%) gave the correct answer to scenario-2. This was an example of collusion.
- 23 students (49%) gave the correct answer to scenario-3. There was no plagiarism, collusion or collaboration in this example.
- 44 students (94%) gave the correct answer to scenario-4, where the scenario referred to an instance of plagiarism.
- 30 students (64%) gave the correct answer to scenario-5. This was an example of collusion.

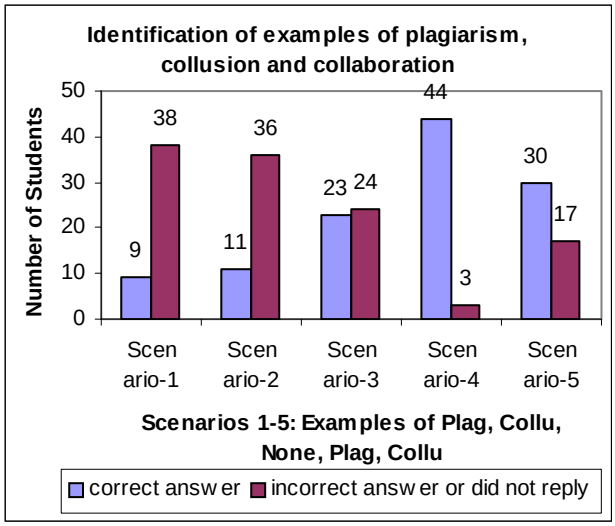

Figure 4: Identification of examples of plagiarism, collusion and collaboration

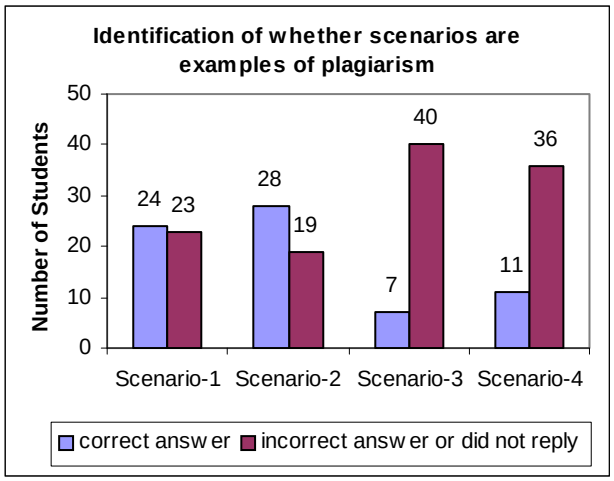

Figure 5: Identification of whether scenarios are examples of plagiarism

4.3 Question 4:

In this question, an extract from a book was provided. Based on this, four scenarios were presented and the students were asked to say whether these were instances of plagiarism, collusion or collaboration.

Here is the summary of results as presented in Figure 5:

- Only one student (from a total of 47) provided correct answers in each case.
- From the remaining 46 students, 24, 28, 7 and 11 students provided correct answers to scenarios 1, 2, 3 and 4 respectively. Other students provided incorrect answers or did not reply to the question.

4.4 Question 5:

In this question, a paragraph taken from a book was made available. Based on this, an extract was provided (that someone might have submitted as part of an assignment). The original paragraph contained some scientific facts, which were reported in the extract, but without reference to any source. Since the original paragraph contained well-known universal scientific facts there was no act of plagiarism. The students were asked to determine whether or not there was an instance of plagiarism in the extract. Here is how students answered the question (refer to Scenario-A in Figure 6):

- 35 students answered the question; other 12 did not.
- only 15 i.e. 43% of them correctly responded.

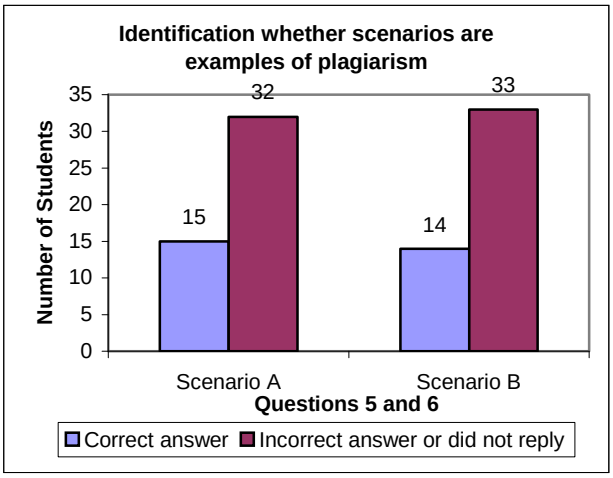

Figure 6: Identification of whether scenarios are examples of plagiarism

4.5 Question 6:

This was very similar to the above question. A paragraph taken from a book was made available. This paragraph contained some well-known scientific facts. Based on this, an extract was provided where the same facts were presented as *result of author's own research*. Obviously, this is unacceptable. Students were asked to determine whether this was an instance of plagiarism or not. Here is how students responded (refer to Scenario-B in Figure 6):

- 31 students answered the question; 16 did not.
- only 14 ie 45% of them correctly identified it as an example of plagiarism.

5. Plagiarism Detection Software

It is not always possible to detect plagiarism especially if it involves *contract cheating* or getting the essay or assignment written privately by someone else for the payment of a fee. However, numerous software tools are available in the market, some to purchase and some freely available, which can help to detect if the information have been taken from another source. The following sections provide a brief introduction to some of the commonly available software.

It should be noted that the tools mentioned in the following sections are designed to detect plagiarism in textual information, and not for detecting copying of program code written in computer languages, although such tools also exist.

5.1 EVE2

This plagiarism detection tool allows academics to determine if students have plagiarized material from the World Wide Web. It runs on Windows 2000, NT and XP systems and accepts text in several formats including: plain text, Microsoft Word, and Word Perfect. After checking through the information on the Internet, it returns links to web pages from which a student may have plagiarized. It produces a full report on each paper that contained plagiarism, including the percent of the essay plagiarized, and an annotated copy of the paper showing all plagiarism highlighted in red [17]. It is relatively inexpensive to buy.

5.2 Plagiarism-Finder

This application compares the given document with sources on the Internet and generates HTML reports highlighting concurrent passages and providing links to the source, for verification. It runs on Windows 2000 and XP systems and accepts files in several standard formats such as PDF, DOC, HTML, TXT and RTF. At the time of writing (July 2009) a trial version is available [18] free, otherwise the price is $125.

5.3 Ithenticate

The application compares a given document against the document sources available on the world wide web. It also compares the given document against proprietary databases of published works (including ABI/Inform, Periodical Abstracts, Business Dateline), as well as numerous electronic books and produces originality reports [19]. The originality reports provide the amounts of materials copied (in percentages) to determine the extent of plagiarism. No installation on home computer is required.

5.4 TurnItIn

This is one the most popular plagiarism detection software available. The University of Derby in the

UK uses this as the standard package to check for plagiarism. Every paper or report upload to TurnItIn [14] is checked against the information sources on the WWW and a customized Originality Report is returned. The originality reports provide the amounts of materials copied (in percentages) to determine the extent of plagiarism. Results are based on exhaustive searches of billions of pages from both current and archived instances of the internet, millions of student papers previously submitted to Turnitin, and commercial databases of journal articles and periodical [14]. Package is available for Windows 2000, NT and XP systems as well as for Mac OS X/9.

5.5 Ephorus

This tool [8] requires registration with the Ephorus site and, therefore, no downloads or installation is needed. Documents are submitted to the Ephorus website (www.ephorus.com). The search engine compares the given document to millions of others on the WWW and reports back with an originality report. License need to be purchased but the system can be freely tried [20]. It is widely used in Europe, South America and the U.S. by universities, colleges and secondary education.

5.6 PlagiarismDetect

This is a freely available Internet service [21]. Its use is similar to Ephorus in the sense that users need to register by providing their names and email addresses. Once registered, text can be entered in the text box provided or a file uploaded for analysis. A report is then sent back to the user with a list of the links where the information has been copied from with percentages referring to the amounts copied.

6. Recommendations for Academics

Although it is difficult to detect plagiarism and collusion and it takes a huge amount of time to monitor websites and compare students' work with their previous submissions for consistency of style of writing (in case of essays/reports) or style of programming (in case of program code), the lecturing staff need to take action to reduce the effect of this malpractice. Here are some suggestions.

6.1 Prepare new assignments each time

This is a preventative measure. In some modules, same assignments are issued repeatedly. In that case, students would collect the previous session's assignment work, modify a little and submit as their own. Also, *ghostwriting* sites are keen to collect such repeat assignments and make solutions available to the next set of students. If new assignments cannot be created easily, it would be sensible to subtly modify the existing ones and use a different assessment strategy.

6.2 Design assignments that are set and delivered in stages

This is another preventative measure. In this case, the assignments are issued in stages, one part at a time, and students are required to submit deliverables on a regular basis and frequently. Ideally, the next part of the assignment should be based on the output of the first part, though this is not always possible. Hopefully, this will reduce the lead-time for external advisors to respond to the demands of the assignments.

6.3 Create personalized assignments

This is also a preventative measure to allow easier detection. Although, time consuming (and not always possible), it is not too difficult to ask some students to write an essay on one topic and others to write on another if all such topics are covered in a module. For a large class, a number of groups can be identified and each group can be given a different assignment. Although this poses an issue of consistency when marking, if marking criteria is made clear then students will have more faith in the assessment strategy. Academics also need to employ mechanisms to improve students' motivation [15, 16].

6.4 Use class tests

This is another preventative measure and will save the hassle of detection and imposing penalties. Also, students will need to prepare for the tests, as the students cannot rely on the help of others as external help will not be forthcoming. This may require a change of assessment strategy for various modules;

however, it is a much cleaner solution.

6.5 Use viva voce

This is especially useful in case of projects at the BSc final year and MSc levels. Since, a project is a substantial piece of research, viva voce should form part of the assessment strategy. The written report (submitted on a CD as well as in printed form) should also be checked through plagiarism software such as TurnItIn [14]. Most universities in the UK follow this approach as a matter of course and it is worth the additional effort. As highlighted by Clarke and Lancaster [7], contract cheating with respect to final year projects is becoming 'popular'.

6.6 Use verification and detection tools

This is a detection measure. Numerous tools are available (e.g. TurnItIn [14], Eve2 [17], Plagiarism-Finder [18], etc. as mentioned in Section 5), to detect copying from Internet sources. Although, this may not always help in case of contract cheating of if the computer code is copied from another source, it may work in the case of textual information (e.g. essays and reports) from existing essay banks supplied by essay mills.

6.7 Monitor auction and essay mill sites

Regular monitoring will allow detection of any undesirable intensions on the part of students with respect to contract cheating as some essay mills have information about their clients. This will also allow early warning to students, if necessary.

6.8 Warn students

This is also a preventative and control measure. It is possible that some students, who may be thinking of making use of auction sites or essay mills, may decide to refrain from taking the risk. Although, some other students who are not aware of such sites, may become interested!

6.9 Change academic regulations

This is a process improvement measure. All educational institutions in the UK have regulations with respect to plagiarism and they all regard plagiarism as an extremely serious academic offence with severe penalties. However, they need to be updated to include regulations with regards to newer approaches such as contract cheating. It is suggested that academics need to discuss to come to a conclusion whether postings to contract cheating sites should be a punishable offence, as the intent to cheat is clearly evident!

7. Discussion and Conclusions

Plagiarism and collusion are forms of *academic cheating* where others' ideas and words are presenting as one's own (without acknowledging the source of such ideas or words) or where students submit jointly produced work with subtle changes to suggest that what they have submitted is individual effort. With the ready availability of information via the Internet and other sources such as *paper mills* and *essay auction sites*, plagiarism is on the increase. Although, educational institutions regard plagiarism as a serious academic offence with severe penalties, nearly half the students who submit plagiarized or collaborated work think their offence will go unnoticed [11].

In this paper, we have outlined reason for submitted plagiarized work and presented the results of an experiment. A questionnaire was designed, containing a number of short extracts and students were asked to determine whether they were instances of plagiarism, collusion or collaboration. Our results show that:

- When asked for definitions, 89% and 74% students said they knew what plagiarism and collaboration was, however, 85% and 32% students defined the terms reasonably correctly. Similarly, only 40% of students said they knew what collusion meant but only 15% of students were able to define it satisfactorily.
- When four scenarios of instances of plagiarism, collusion and collaboration were presented, only 24, 28, 7 and 11 students (out of a total of 47) identified them correctly. In each case, less than half the students identified the situations correctly.
- When another example was presented and

students asked to determine whether or not this was an instance of plagiarism, 35 students responded and only 43% of them gave the correct answer. This represents 32% of the total number of students providing the correct answer.

- When given another similar example, 31 students responded and only 45% of them gave the correct answer. This represents 30% of the total number of students providing the correct answer.

The results clearly show that whereas students think they know what plagiarism (and collaboration) is, they cannot always identify or determine it correctly. Also, students do not generally understand what collusion means. It was rather surprising to note the students' ignorance, especially when the students were in the final years of their programmes of study and the majority of students were of English speaking origin.

This suggests that educational institutions need to spend much more time explaining what constitutes plagiarism and what are its penalties and ensuring that students not only understand it but also actively avoid it. Besides, institutions need to be more active in detecting plagiarism, by using detection software along with other detection mechanisms – to deter students from committing this academic offence. In this respect, the paper also discusses, albeit briefly, a number of plagiarism detection tools, available in the market.

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