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Plagiarism among First Year University Students Using AutoCad Assignments

Siti Fatin Mohd Razali[1,2]*, Azrul Mutalib[1], Noraini Hamzah[1] and Shahrizan Baharom[1]

[1]Department of Civil and Structural Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia
[2]Engineering Education Research Center, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia

ABSTRACT

Student honesty when completing assignments is a major indication to lecturers that students have acquired and know how to apply knowledge shared in the lecture hall. However, the problem of plagiarism among students in writing assignments has become a major problem in education. Plagiarism works as an indicator that students do not practise or apply or know how to apply knowledge that has been covered in class. The continued practice of plagiarism can only produce incompetent graduates who have no integrity. This study focusses on plagiarism as a whole; plagiarism occurs when students submit work that was actually completed by someone else but claims it as their own effort. A total of 73 students of Engineering Graphics participated in this study. A graphic drawing assignment using the AutoCad software was given to each student every week for four weeks. Plagiarism checking was carried out only after all assignments for the four weeks were received. Results of the study found that at least 25% of the students had committed plagiarism in every assignment. The largest group plagiarism was as high as 34 out of 73 (47%) students, all of whom shared the same file for one assignment. The results of this study will give better insight into temptation faced by students to commit plagiarism as a result of no action being taken by the course lecturer.

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E-mail addresses:
fatinrazali@ukm.edu.my (Siti Fatin Mohd Razali),
azrulaam@ukm.edu.my (Azrul Mutalib),
ainhamzah@ukm.edu.my (Noraini Hamzah),
shahrizan@ukm.edu.my (Shahrizan Baharom)
* Corresponding author

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INTRODUCTION

Plagiarism has become ingrained culture among university students around the world (Ashworth et al., 1997; Sheard et al., 2002).

Plagiarism refers to presenting a certain work as one's own, without giving credit to the original owner, within or without the knowledge of the originator (Walker, 1998; Park, 2003; Martins et al., 2014). Plagiarism is also regarded as fraud and showing lack of integrity in the offender (Park, 2003). There are many forms of plagiarism, such as copying directly without quoting the source; acknowledging the source but not doing any paraphrasing; copying former students' reports as one's own or 'recycling' reports and many more (Walker, 1998). All these problems have been identified as common and practised by many students in universities around the world.

In the academic context, plagiarism should not be taken lightly, and students who commit this offence should be penalised for being unethical and having no integrity. Moreover, plagiarism often crops up not only in written assignments, but also in assignments that require the use of software. When plagiarism is committed, lecturers will not be able to evaluate students' abilities accurately. While it is imperative for lecturers to be able to detect plagiarism, it cannot be denied that this can be an onerous task especially when the class has a large number of students.

Plagiarism in writing can be identified using various methods, among which are: 1) Conducting a search on the suspected sentence on the Internet; and 2) using plagiarism software such as Turnitin. On the other hand, plagiarism in the use of software is quite difficult to detect. Many studies have attempted to propose an effective method to detect plagiarism in the use of software. For example, Martins et al. (2014) created a plagiarism detection software to detect plagiarism source codes. They found that there were several types of complex plagiarism, such as changing statements, variable types, comments and identifiers' names, in order to make the source code different and unlikely to be detected as plagiarism code. Furthermore, they also had difficulty distinguishing between intended plagiarism and coincidence states.

Walker (1998) suggested that the academic staff create tools or steps in order to detect plagiarism and eventually stop the unethical activity. These steps may require students to submit multi-draft reports with the source materials; submit the work with a declaration of the report being their own work; and varying topics of assignments every semester or year. He also stated that the most important tool for a lecturer is to be able to detect plagiarism when it prevails.

Similarly, detection of plagiarism in graphic assignments using software is also quite difficult, as most students choose to take another student's soft copy of the assignment file and submit as their own. Therefore, it is very important for a lecturer to check whether plagiarism has taken place, even if the students try to hide it in several ways, namely: 1) Changing the name of the file;

2) changing the colour of the drawing or font properties in the files; and 3) adding or reducing some details in the file. This type of full plagiarism is undoubtedly the worst in the academic context as the plagiarising student does absolutely no work of his or her own. At the same time, many lecturers are not well versed in recognising or evaluating plagiarised work and simply believes that students have done their assignment themselves, and their duty as lecturer is completed when the students submit their assignment on time.

There are several ways to check plagiarism of work done using graphic software. One of them is to use the log file submitted by the students along with the project file ("Finding Cheaters", 2004). However, this process does not allow lecturers to conduct the plagiarism check without students being aware of the checking process. Another method is to use the 'time' command in an AutoCad file. This can be done after the students have submitted their graphic files. This method takes less time and can be done without the students' knowledge. This method will be discussed in detail in the section on Methodology below.

Plagiarism is an issue faced by the Department of Civil and Structural Engineering, Universiti Kebangsaan Malaysia involving its first-year students. Although warnings are given to the students before assignments are released, plagiarism among students is still rife. The high number of students who commit plagiarism in their assignments is the main reason that this study was carried out. The objective of this study was to focus specifically on the rate of plagiarism in graphic assignments using AutoCad software among first-year students pursuing a Graphic Engineering course. This study was carried out using the time-tracking method that exists automatically in each AutoCad file. This method can produce strong evidence of plagiarism, and once detected, it cannot be denied by the offenders.

METHODOLOGY

A total of 73 first-year students of the Engineering Graphics course, Session of 2013/2014, in the Department of Civil and Structural Engineering, Universiti Kebangsaan Malaysia were chosen as the research subject. Every week, the students were given a task that required them to draw graphically using the AutoCad software. The study period was four weeks. The tasks were labelled Tasks A, B, C and D, referring to the sequence of the assignment over the four weeks. The timeline for Tasks A, B and C was one day while Task D was required to be completed within two hours and submitted at the end of the class. Apart from that, the students were required to submit their assignments online to the course lecturer. All files submitted had to be named with the students' matric number followed by the assignment title.

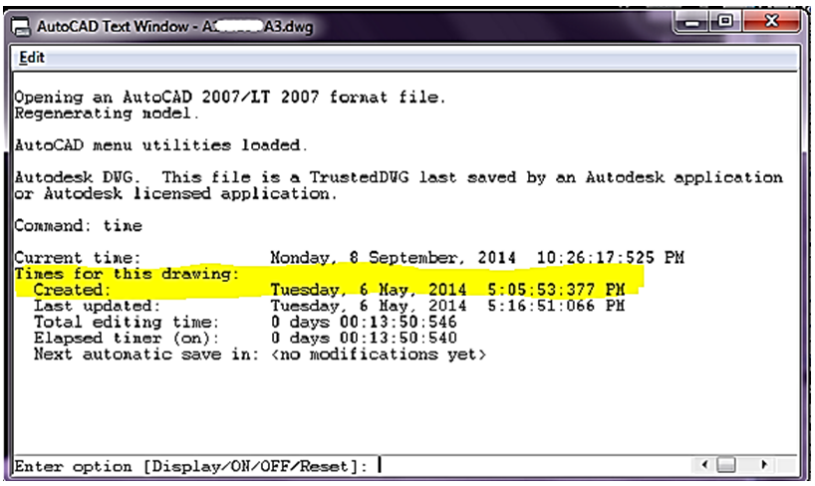


Figure 1. Created time form of graphic files that can be viewed using the 'time' command in AutoCad.

Figure 1 shows a time record automatically generated by AutoCad when a file is created. The time when the file was created and when it was last updated are automatically recorded by the software. The time format is in milliseconds. This study assumes that it is impossible for more than one student to create a new file at the same time where time is being measured in milliseconds. All the cases of plagiarism reported here have been verified by the offenders themselves, who admitted to the offence when confronted with the evidence. Therefore, all data used in this study is valid.

After all the AutoCad drawing assignments by the students over the four weeks were accepted, plagiarism analysis for each file was carried out. Every AutoCad drawing file was identified by the 'created time' recorded by AutoCad. The existence of a file is not changed even if the file is changed, cut or copied. The file remains as is and may be found using the instruction 'Time' in AutoCad.

RESULTS AND DISCUSSION

Total Number of Plagiarism Cases

The analysis of the four tasks for 73 first-year students is shown in Figure 2. The number of students refers to the students involved in committing the offence of plagiarism, and does not take into account the original owner of the file or the offenders. A high number of students committing plagiarism was marked, with at least 25% (18 students) for each task, signalling a very worrying trend. Assignment C shows us the highest number of plagiarism with 59 students, compared to only 18 students who committed plagiarism in completing Assignment A. The number of plagiarism cases increased dramatically every week with each new assignment given. This suggests that the students became more audacious in resorting to plagiarism over time when it was seen that the course lecturer seemed to be taking no action.

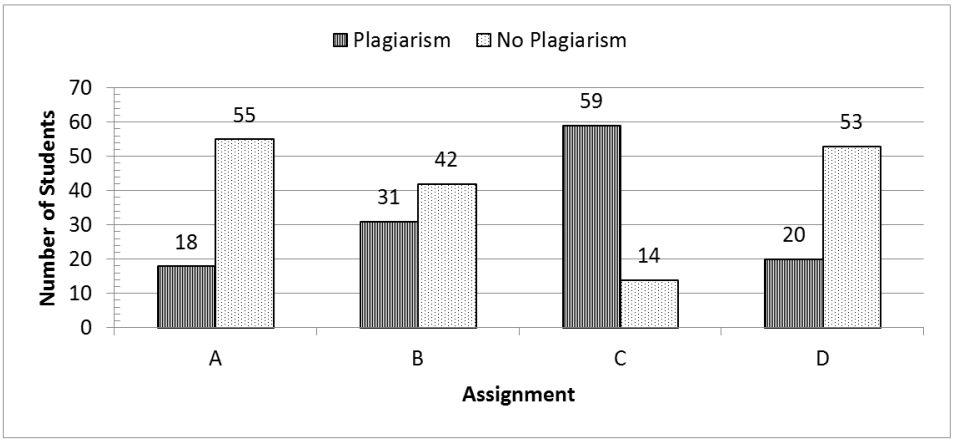


Figure 2. Number of students who committed plagiarism in assignments A, B, C and D.

The number of students who committed plagiarism increased dramatically, from 43% in completing Assignment B to 81% in completing Assignment C, signalling a significant decrease in overall student integrity. The sharp decline in plagiarism from 59 in completing Assignment C to 20 in completing Assignment D (a reduction of about 53%) was probably due to the shortened timeline given for completing Assignment D, which had to be submitted before the class ended, making it difficult for students to openly copy files as they were all in class. The hypothesis offered for the decrease in plagiarism is that the shortened timeline and having to work in class together with other students and in the presence of the lecturer prevented students from copying; and furthermore, that a substantial increase in plagiarism on Assignment D would have taken place if a longer deadline for completion of the assignment had been given.

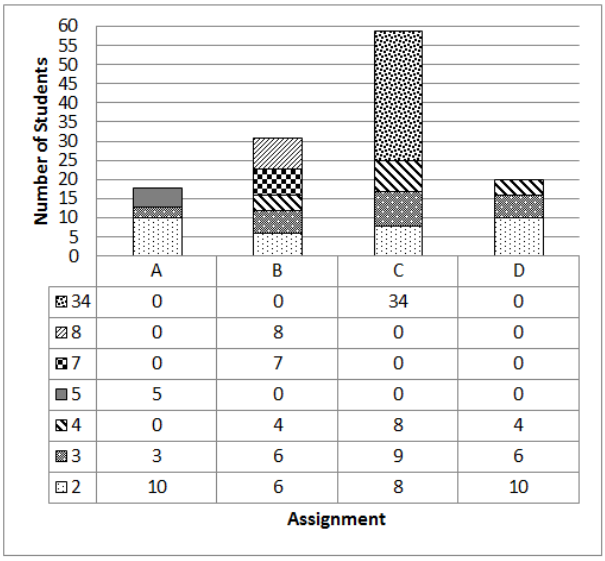
Group Plagiarism

Figure 3 shows the number of files that were copied and sent by students working in groups. A total of 18 students committed plagiarism on Assignment A, of whom a total of 10 students committed plagiarism in groups of two students each, while three and five students had shared the same file. For Assignment B, file sharing was rife in larger groups of seven and eight students. There were also plagiarism cases in a group of two, three and four students involving a total of 16 students.

The incidence of plagiarism was more prevalent on Assignment C, for which 34 students submitted the same file. This was probably due to lack of monitoring by the course lecturer on the previous two assignments, namely Assignments A and B, thus signalling to the students that cheating was tolerated. This means that consistent and frequent monitoring by lecturers is crucial in preventing students from committing plagiarism. The students were also found to have made minor

changes to their copied files such as to the colour of the drawing lines and file name, or by adding fonts in the drawing as well as other alterations in an attempt to hide evidence of plagiarism. A total of 25 students plagiarised on Assignment C in a group of two, three or four students.

For Assignment D, students were given a warning before starting with respect to plagiarism, to the effect that they would be awarded a zero mark if found plagiarising or to have plagiarised. However, the warning was ignored as students who had plagiarised on the previous three tasks were unable to complete Assignment D. The decrease in the number of plagiarism cases on Assignment D could also be due to the warning given beforehand about the penalty for plagiarism, indicating that monitoring by the course lecturer in class can reduce plagiarism even if it does not eliminate it altogether. Plagiarism was evident at this stage, committed by 20 students, although it occurred only in small groups of two, three or four students. Ten students had shared the same files in a group of two; six students in a group of three; and four students who worked in the same group.



	A	B	C	D
34	0	0	34	0
8	0	8	0	0
7	0	7	0	0
5	5	0	0	0
4	0	4	8	4
3	3	6	9	6
2	10	6	8	10

Figure 3. Number of cases of plagiarism committed by students working in groups.

Frequency of Plagiarism by Each Student

Figure 4 presents the frequency of every student who committed plagiarism on their assignments. Only 12 students did not resort to plagiarism on any of the four assignments. About 16% of the first-year students were honest in completing their work. About 30% of the students plagiarised once, 22% plagiarised twice, 25% thrice and 7% did not do all their assignments by themselves.

In assignment A, 55 students did their assignment themselves (honest students),

but 16 of them committed plagiarism on Assignment B. This group of students might have realised that the other students who had plagiarised had not been found out or penalised by the course lecturer. The number of honest students decreased further on Assignment C, as only 13 students submitted their own work, making this assignment the one with the highest number of plagiarism cases compared to other assignments. On Assignment D, only one student from the 'honest students' group had submitted plagiarised work although a warning had been given regarding plagiarism to the students. For the 59 students who had committed plagiarism on Assignment C, only 19 had persisted in committing this offence on Assignment D, while the other previous offenders seemed to have decided not to commit any misconduct after a warning was given. Only six students committed plagiarism consistently on all four assignments despite the given warning.

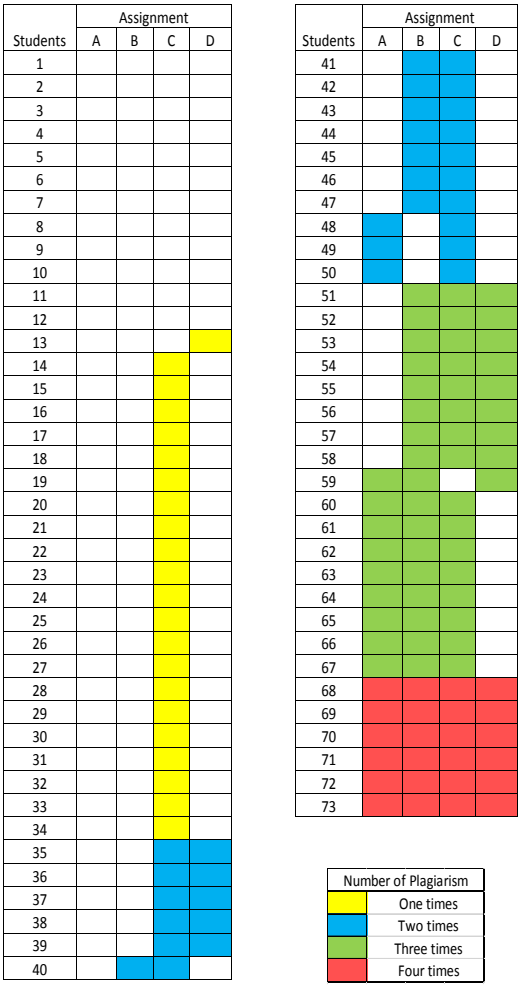


Figure 4. Number of plagiarism cases by each student on assignments A, B, C and D.

When and Where Did the Plagiarism Occur?

Many questions were raised on when and where the plagiarism occurred. For instance, how did the students submit plagiarised Assignment D files, as the files had to be submitted at the end of the class. One possibility is that since the file had to be sent through the course online system with the support of the Internet, the students could still exchange files with one another through email. They could also copy files and exchange them using an external drive. This brings up the issue of the ease of plagiarising through use of the Internet as a contributing factor in the trend of excessive plagiarism today, as the Internet makes it easy and convenient for any files to be dispatched in seconds. The time constraint imposed for completion of Assignment D might have caused the reduction in the plagiarism cases. With extra time allowed to complete the previous three assignments, they had had the opportunity to plagiarise while making alterations to prevent easy detection of plagiarism through editing, changing properties of the drawing and other details.

CONCLUSION

Plagiarism is a very serious problem and it can grow to alarming heights if no measure is taken by the course lecturer to curb or prevent it altogether. Plagiarism involving a group of 34 students shows that the rate of plagiarism is increasing and is likely to continue to increase if no monitoring is done by lecturers. Although the monitoring was done only before the final assignment was handed out, and a warning was also issued, a total of 20 students had not been deterred from committing the crime again, allowing for only a reduction in plagiarism of about 53%. This shows that plagiarism can be reduced, but can persist even when the course lecturer is monitoring its incidence. This study has shown that the temptation besetting students to commit plagiarism was higher when no action was taken by the course lecturer to correct their behaviour. Further study can be done to compare the plagiarism rate when students are monitored on every task and action is taken by the course lecturer to correct wrong conduct.

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