

Acknowledgements

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Abstract

With the widespread use of the Internet especially in higher education institutions, plagiarism among students needs careful deliberation and action. Although plagiarism is common among students, it is only fair to investigate whether they clearly understand its definitions and the consequences of committing plagiarism before any form of penalty is to be imposed. Hence, the aim of this study is two-fold: to investigate the level of understanding and awareness of Universiti Malaysia Pahang (UMP) students and lecturers on plagiarism, and to examine the nature and extent of plagiarism, if evident, in students' final year project, *projek sarjana muda (PSM)* research reports. Two sets of questionnaires developed by researchers, PLaQ-s and PLaQ-l, were administered separately in the student survey and academic staff online survey respectively. 10 copies of students' PSM reports from one faculty were then randomly collected and the literature review sections of students' PSM reports were later analysed as this section could contain more elements of plagiarised texts compared to other sections. Plagiarism analysis framework (PAF) was developed by researchers for use in manual analysis while the Web-based plagiarism detection engine Plagiarism-Finder 1.0u) available for free, was also used in electronic analysis. The findings in this study showed that although plagiarism was evident in selected sample of UMP students' PSM reports, free digital plagiarism detection tool was not solely capable on its own of performing thorough analysis and this had to be followed by manual mode of detection using PAF. It was concluded that despite the existence of awareness and general understanding of what plagiarism was, selected sample of students' PSM did contain both textual and non-textual form of plagiarism, from minor to plagiarism outright, calling for serious proactive and reactive actions from university lecturers, administrators and policy makers.

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The logo for UIMP (Universiti Malaysia Perlis) is a large, downward-pointing arrow shape. It is composed of four triangular sections meeting at a central point. The top-left and bottom-right sections are light blue, while the top-right and bottom-left sections are a slightly darker blue. In the center of the arrow, the letters 'UIMP' are written in a bold, white, sans-serif font.

UIMP

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List of Abbreviations

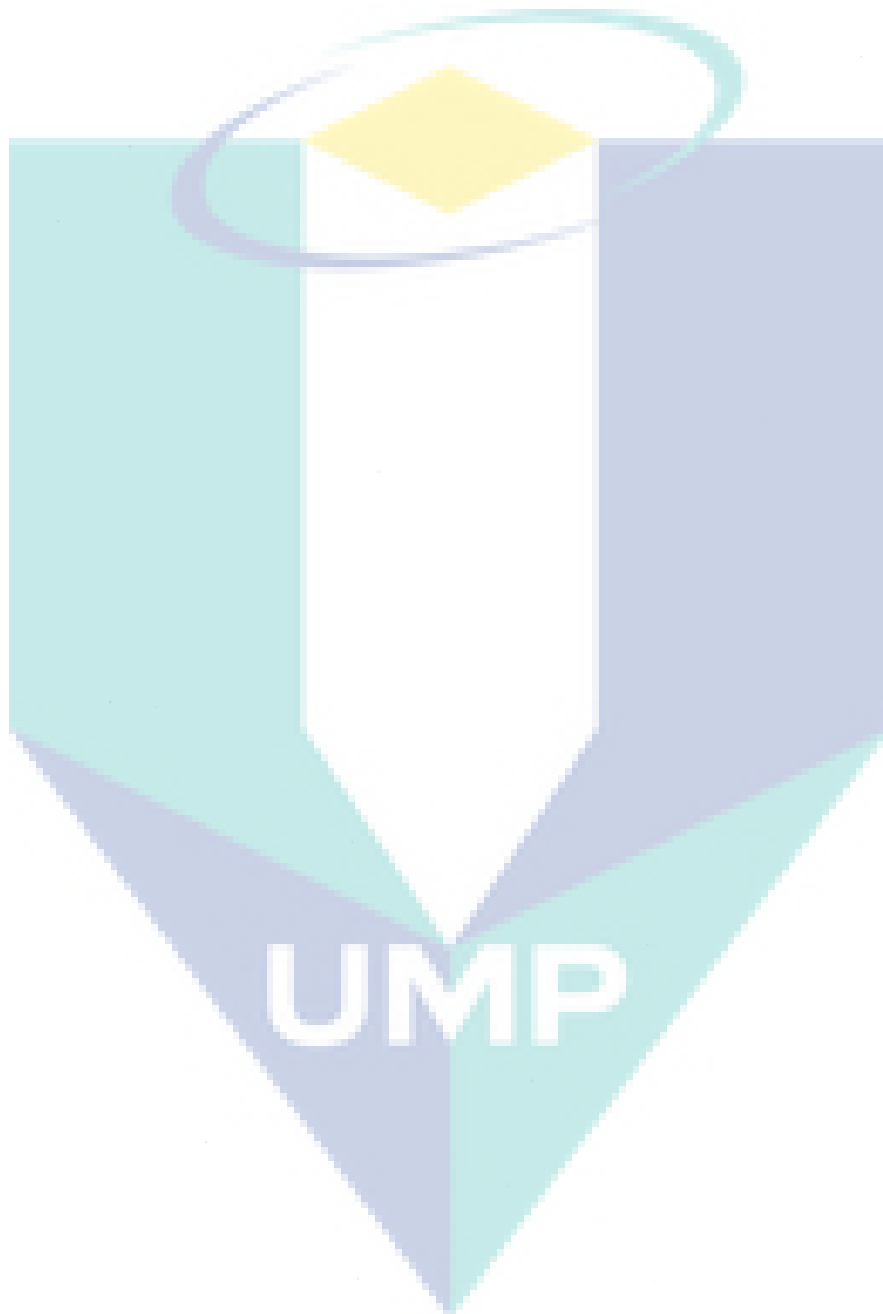
| <u>Abbreviation</u> | <u>Definition/ Description</u> |
|---------------------|---|
| CMLHS | Centre for Modern Languages and Human Sciences |
| FKASA | Faculty of Civil and Environmental Engineering |
| FKEE | Faculty of Electrical and Electronic Engineering |
| FKM | Faculty of Mechanical Engineering |
| FKKSA | Faculty of Chemical Engineering and Natural Resources |
| FSKKP | Faculty of Computer Systems and Software Engineering |
| FYP | Final Year Project |
| HEI | Higher Education Institute |
| ICT | Information and Communication Technology |
| IMS | Integrated Management Systems |
| PAF | Plagiarism Analysis Framework |
| PFS | Plagiarism-Finder Software |
| PlaQ-l | Plagiarism Questionnaire for lecturers |
| PlaQ-s | Plagiarism Questionnaire for students |
| PPT | Centre for Technology Management |
| <i>PSM</i> | <i>Projek Sarjana Muda</i> |
| UMP | Universiti Malaysia Pahang |
| URL | Universal Resource Locator |



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CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter introduces background to the study which led to the problem being investigated in an attempt to search for the answers to the research questions that correspond with the objectives of this research. Although plagiarism is indeed an issue that is commonly linked to the academic world, researchers have carefully identified specific areas to be covered in this study to obtain valuable insights for optimal benefits to the academic community. Consequently, it is anticipated that findings from this study would increase awareness and understanding on plagiarism related issues while at the same time provide guidelines for students in adopting appropriate plagiarism avoiding strategies as well as academic staff and administrators in their efforts to detect, prevent and overcome plagiarism among students.

1.1 Background to the study

The availability of huge amount of information in various forms in the Internet and its easy accessibility seem to have made the internet both a bliss and a devil in disguise. Guha (2002) states that the use of internet has helped students to cheat by copying and pasting portion of information from reading materials and papers of similar title of their works as well as duplicating ideas. These are done sometimes without them realising it, and indirectly, this has reduced students' ability to produce original works. Therefore, the abundance of online materials and its easy access have indeed increased the chances of plagiarism especially among students (Gajadhar, 1998; McMurtry, 2001; Slobogin, 2002) thus raising ethical issues associated with it (Gajadhar, 1998; Scanlon, 2003).

1.2 Statement of the problem

Plagiarism especially among students at tertiary level education has reached a stage where alarming statistics (Kraus, 2002; Slobogin, 2002) across most disciplines or major fields of specializations (Hendershott, Drinan & Cross, 2000) demands quick remedial actions in the form of detection techniques and preventive measures. As such, there is a need to determine whether or not plagiarism linked with online materials exists in UMP students' academic writing with specific reference to their final year project (FYP) or *projek sarjana muda (PSM)* reports. If found to be evident, the nature and the extent of such plagiarism cases would then require further scrutiny into the matter in order to form a commonly acceptable definition of what plagiarism is and what it is not. In view of the agreed definition of plagiarism, it is also essential to identify factors that cause plagiarism to occur and distinguish between major and minor cases of plagiarism before offering practical solutions and suggesting clear guidelines for use.

1.3 Research objectives

Researchers in this study set out to achieve the following objectives:

- (a) to investigate the level of awareness of plagiarism among students and lecturers at UMP,
- (b) to determine the extent of understanding of the nature of plagiarism among students and lecturers at UMP,
- (c) to explore the views of UMP students and lecturers on the factors that trigger plagiarism, and
- (d) to investigate online-linked plagiarism in UMP students' *PSM* reports.

1.4 Research questions

In order to achieve the objectives of this study, researchers sought to find answers to the following questions:

- (a) What is the level of awareness among students and lecturers at UMP of plagiarism?
- (b) What is the extent of understanding among students and lecturers at UMP of the nature of plagiarism?
- (c) What are the factors that trigger plagiarism from the perspectives of UMP students and lecturers?
- (d) Is there evidence of online-linked plagiarism in UMP students' *PSM* reports?
 - a. If found evident, what is the extent of online-linked plagiarism in UMP students' *PSM* reports?
 - b. If found evident, what is the nature of online-linked plagiarism in UMP students' *PSM* reports?
 - c. If found evident, what guidelines are to be proposed in order to deal with online-linked plagiarism?
 - d. If found evident, what strategies are to be proposed in order to overcome online-linked plagiarism?

1.5 Scope of research

The scope of this research covers and is limited to:

- (a) a survey conducted among selected sample of students and academic staff at Universiti Malaysia Pahang (UMP) using two separate instruments in the form of questionnaires developed by researchers in this study,
- (b) evidence of plagiarism linked with online materials only,
- (c) evidence of plagiarism in selected sample of UMP *PSM* reports only,
- (d) manual detection of plagiarism using one instrument developed by researchers in this study, and

- (e) digital detection of plagiarism using one free plagiarism detection software.

1.6 Significance of the study

Plagiarism is a serious and punishable offence, an implication that many are either unaware of or simply choose to ignore even if they are aware of the consequences. There could be academic plagiarism cases that go undetected, leaving not only the offenders unpunished but raising ethical questions to academic honesty and integrity at individual as well as institutional levels. Therefore research on plagiarism would eventually yield useful findings that help academics detect plagiarism and students alike avoid plagiarism. Moreover, the use of information and communication technology (ICT) in education should not be viewed as impeding but rather enhancing students' learning capabilities and providing lecturers with a variety of teaching aids. In addition, studies on plagiarism would also help administrators at higher education institutions (HEIs) to form clear guidelines on the legal and ethical implications of plagiarism within academic setting for students and academics.

The logo for UIMP (Universiti Malaysia Perlis) is a large, stylized letter 'V' shape. The left side of the 'V' is light blue, the right side is a darker blue, and the bottom point is a teal color. The letters 'UIMP' are written in white, bold, sans-serif font across the center of the 'V' shape.

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CHAPTER 2

REVIEW OF RELATED LITERATURE

2.0 Introduction

In this chapter, a review of related literature on plagiarism covering definition and nature of plagiarism, factors that cause plagiarism to occur, how to detect and deal with it as well as how to avoid and overcome plagiarism, with reference to academic writing and Internet-based materials.

2.1 Definition of plagiarism

From etymological viewpoint, the word ‘plagiarism’ has been linked with the Latin word, *plagiarius* meaning ‘kidnapper’, ‘seducer’, ‘plunderer’ or more accurately, ‘literary thief’. The word *plagium* (‘kidnapping’) is derived from *plaga* (‘snare’, ‘net’), which was first attested in 1597 (Online Etymology Dictionary, 2001) although Random House Unabridged Dictionary (2006) stated that it was first used two or three decades later between 1615 and 1625. The difference however could be due to the term used being ‘plagiary’ instead of ‘plagiarism’.

Whether ‘plagiarism’ or ‘plagiary’, all references are consistent in defining the act as a form of theft. A quick search of the word ‘plagiarism’ in Kernerman English Multilingual Dictionary by WordNet® version 3.0 (Princeton University, 2006) listed the following terms found in various languages:

Table 1: Terms for plagiarism in different languages

| | |
|--|--------------------------------|
| Arabic: إنتحال مؤلف، سرقة أدبية أو فكرية | Latvian: plaģiāts |
| Chinese (Simplified): 剽窃 | Lithuanian: plagiatas |
| Chinese (Traditional): 剽竊 | Norwegian: plagiat, plagiering |
| Czech: plagiátorství | Polish: plagiat, plagiatorstwo |
| Danish: plagiering | Portuguese plágio (Brazil): |
| Estonian: plagiaat | Russian: плагиат |
| French: plagiat | Slovak: plagiátorstvo |
| Greek: λογοκλοπή | Slovenian: plagiatorstvo |
| Hungarian: plágium | Spanish: plagio |
| Indonesian: penjiplakan | Swedish: plagiering, plagiat |
| Italian: plagio | Turkish: eser hırsızlığı |
| Korean: 표절 | |

From academic viewpoint, plagiarism is most commonly regarded as lack of academic integrity or a form of academic cheating (Dobrovská & Pokorný (2007) academic dishonesty (University of California Berkeley, 2004; George Washington University as cited in Burke et. al. 2007), academic malpractice (Park 2003a; Carroll & Seymour, 2006) or academic misconduct and also negligent academic practice (Carroll & Seymour, 2006). Gillet (2008) compiled the following definitions of ‘plagiarise’ and ‘plagiarism’:

The concise Oxford dictionary (6th edition) (1976)

Plagiarise - Take and use another person's (thoughts, writings, inventions) as one's own.

The Cambridge international dictionary of English (1995)

Plagiarise - To use (another person's idea or part of their work) and pretend that it is your own.

The Oxford advanced learner's dictionary (5th edition) (1995)

Plagiarise - To take somebody else's ideas or words, and use them as if they were one's own.

The Oxford advanced learner's dictionary (6th edition) (2000)
Plagiarise - To copy another person's words or work and pretend that they are your own.

Collins COBUILD English language dictionary (1987)
If you plagiarise someone else's ideas, or part of a piece of writing or music by someone else, you use it in your own work and pretend that you thought of it or created it.

Funk and Wagnalls' new standard dictionary (1921)
Plagiarism is the act of appropriating the ideas, writings, or inventions of another without due acknowledgement; specifically, the stealing of passages either for word or in substance, from the writings of another and publishing them as one's own.

Collin's pocket English dictionary (1987)
Plagiarism is the taking of ideas, writings, etc. from another and passing them off as one's own

University of Hertfordshire Policies and Regulations, 17.7, 5.2.
Plagiarism is the representation of another person's work as the student's own, either by extensive unacknowledged quotation, paraphrasing or direct copying.

MLA handbook for writers of research papers (1995)
To use another person's ideas or expressions in your writing without acknowledging the source is to plagiarise.

(Source: <http://www.uefap.com/writing/plagiar/plagiar.htm>)

It is clear that all definitions suggest plagiarism as an act of 'stealing' or 'theft' and such act is said to have been made without proper acknowledgement of the original author(s). Nevertheless, some may divide plagiarism into a few categories according to varying degrees of cheating (Park, 2003a) and make a mention of the offender's awareness as an important element in determining what type of plagiarism has taken place.

2.2 Types of plagiarism and its causal factors

As mentioned before, although all definitions of plagiarism in academic writing do point towards 'literary theft' and 'lack or no proper acknowledgement of original source(s)', two elements namely the degree of the plagiarised text and the plagiarist's intention or lack of awareness lead to classification of plagiarism. For example, Beasley (2003) categorised plagiarism based on the intention of the plagiarist: accidental, opportunistic or committed. Having no idea of what plagiarism is, the accidental plagiarist may have plagiarised other people's works out of ignorance or may have made a genuine mistake in citation whereas the opportunistic type is the kind of plagiarist who knows what plagiarism is but continues to plagiarise because of poor writing skills, laziness or fear of not getting good grades. Nevertheless, some may not 'recognise the concept of accidental plagiarism' (School of Humanities, University of Birmingham, 2007) but categorise plagiarism according to the seriousness of the offence (serious, moderate and slight) based on certain criteria such as:

- (a) quantity, in terms of percentage, and
- (b) level or year of study (year 1, year 2 and year 3/ final year).

On the other hand, the committed plagiarist is the one who blatantly and intentionally steals other people's works for various reasons including 'just for fun', some of which could be the same as in accidental and opportunistic types of plagiarism. In short, the existence of intention, although 'a notoriously difficult matter to prove or disprove', is also what differentiates between 'prototypical plagiarism' and 'patchwriting', a common feature in English as a second language (ESL) novice writing (Howard, 1995) because 'it lacks the element of intentional deception, and it is not a terminal stage' (Pecocari, 2003).

Other practices associated with plagiarism though they may be based on different considerations include 'pseudo-plagiarism' such as 'vague definition, self plagiarism and plagiarism of secondary sources' (Bouville, 2008). Vague definition occurs in cases where proper citation of page number(s) is not provided or quotation marks are not used appropriately (Hexham, 1992). Self plagiarism, also known as duplicate publication, happens when the author makes use part or whole of already published materials without proper acknowledgement in other publication(s) (Giles, 2005). Plagiarism of secondary sources refers to a 'more subtle' form of plagiarism which according to Martin (1994) as cited in Bouville (2008) 'occurs when a person gives references to original sources, and perhaps quotes them, but never looks them up, having obtained both from a secondary source – which is not cited'. Some however, may treat this as 'bad practice' or 'infringements of academic convention which do not amount to plagiarism' (see Revised Plagiarism Policy 2007, School of Humanities, University of Birmingham).

In their study on electronic cheating, Dobrovska and Pokorny (2007) listed characteristics of academic dishonesty into the following seven types of behaviour which may be applied in any medium, textual or non-textual, online or non-online:

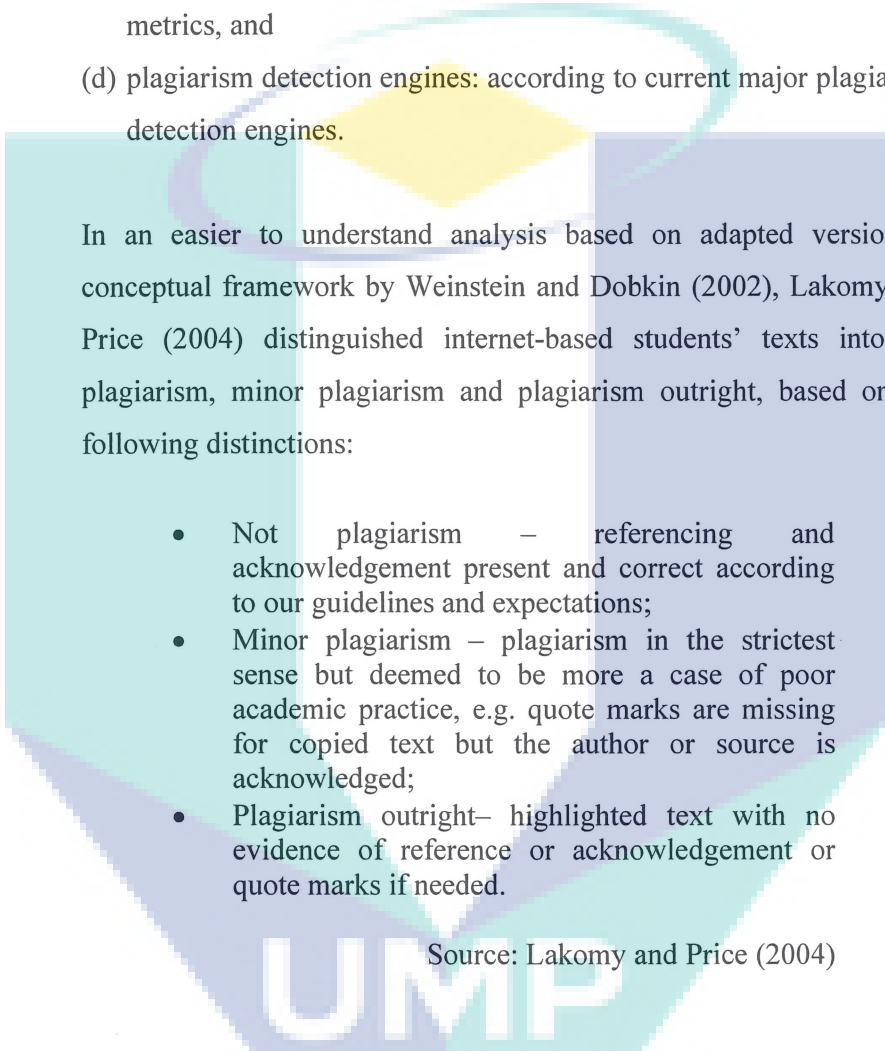
- (1) inappropriate/ inadequate acknowledgement: material copied word for word which is acknowledged as paraphrased but should have been in quotation marks, or material paraphrased without appropriate acknowledgement of its source,
- (2) collusion: material copied from another student's assignment with her or his knowledge,
- (3) verbatim copying: material copied word for word or exactly duplicated without any acknowledgement of the source,

- (4) ghost writing: assignment written by third party and represented by student as her or his own work,
- (5) purloining: material copied from another student's assignment or work without that person's knowledge,
- (6) plagiarism: intentional or unintentional use of another's work or ideas, published or unpublished, without clearly acknowledging the source of that work or idea,
- (7) "cut 'n' paste" technology: used for restructuralisation and stylistic modification of someone else's text.

Source: Dobrovská and Pokorný (2007)

Eventually, Dobrovská and Pokorný (2007) suggested three types of internet-based plagiarism: 'whole text from another source, minor changes in style and syntax, and paraphrasing of words and ideas'. In addition, Dobrovská and Pokorný (2007) also make a distinction between cheating and plagiarism by means of deliberate intention as plagiarism could either be intentional or unintentional while collusion, although being deliberately intentional as in cheating, occurs with the aid of an accomplice.

Electronic plagiarism may broadly be classified into two categories (free text plagiarism and source code plagiarism). Free text plagiarism involves natural language, for instance, student essays whereas source code plagiarism is defined as plagiarism of computer programmes (Culwin & Lancaster, 2000). Lancaster (2003) also cited two types of traditional classification of detection engines (attribute counting systems and structure metrics systems) which he suggested was inconsistently applied and not comprehensive in nature. Instead, he proposed classification of electronic plagiarism detection based on the following:

- 
- (a) availability of the engine: whether it is a local or a Web-based detection engine (normally free plagiarism detection engine),
 - (b) number of submissions processed by the metrics used: whether singular, paired, multidimensional or corpal metrics,
 - (c) complexity of the metrics used: whether superficial or structural metrics, and
 - (d) plagiarism detection engines: according to current major plagiarism detection engines.

In an easier to understand analysis based on adapted version of conceptual framework by Weinstein and Dobkin (2002), Lakomy and Price (2004) distinguished internet-based students' texts into not plagiarism, minor plagiarism and plagiarism outright, based on the following distinctions:

- Not plagiarism – referencing and acknowledgement present and correct according to our guidelines and expectations;
- Minor plagiarism – plagiarism in the strictest sense but deemed to be more a case of poor academic practice, e.g. quote marks are missing for copied text but the author or source is acknowledged;
- Plagiarism outright– highlighted text with no evidence of reference or acknowledgement or quote marks if needed.

Source: Lakomy and Price (2004)

Several factors have been identified as causes of plagiarism. As cited in McCord (2008), many students are actually very much concerned with getting good grades (Beasley, 2004; Hughes & McCabe, 2006), although easy access to Internet-based materials has also been mentioned as another contributing factor. In their study on plagiarism in engineering education, Adeva, Carroll and Calvo (2006) concluded

that lack of preparation in adjusting to the demands of life as university student also caused students to resort to plagiarism. In short, Beasley (2004) summarised eight causes of plagiarism to be: '(1) disorganization, (2) information overload, (3) ethical lapses, (4) laziness, (5) ignorance, (6) fear, (7) cryptomnesia, [and] (8) thrill seeking'.

2.3 Strategies to detect and avoid plagiarism

The abundant wealth of available information at the click of a mouse in the Internet age is indeed an acid test of academic honesty. As such, academics in their capacity as examiners and reviewers, should adopt effective plagiarism detection strategies to preserve the integrity of the academy they represent and send strong message to offenders that such an act will be duly penalised. In order to identify effective plagiarism detection strategies, one has to understand the nature of the offence. As most academic works are now produced and stored in digital format, academicians should take into consideration digital tools to detect textual and non-textual, online and non-online plagiarism instead of relying only on manual means of detection. Hughes and McCabe (2006) have also suggested the use of technology in detecting plagiarism while Lancaster and Culwin (2007), as cited in McCord (2008) have added that using 'writing style evaluation tools may help identify potential plagiarism if samples of students' original writing are first interpreted'.

It is also equally important to make students realise that academic writing is a skill that students can learn and should master gradually from the early semesters until they reach the final year and proceed to graduate level. Therefore, students should be exposed to academic writing courses and proper citations techniques, emphasising on plagiarism avoidance strategies. While it is perhaps difficult to have a

world of virtually no plagiarism at all, it is very much possible to reduce the number of plagiarists and plagiarism cases. Hughes and McCabe (2006) have outlined several ways to overcome plagiarism, from developing a sense of academic integrity through training and awareness programmes to using digital plagiarism detection strategies and imposing penalties on plagiarists while McCord (2008) recommends the following practical suggestions:

- (a) give assignments of varying nature and frequency from semester to semester,
- (b) instead of one single assignment, break it up into a few parts or components so that progress may be monitored stage by stage,
- (c) request for assignments to be submitted in different mode or require primary sources of information from interviews, experiments or use of digital tools to record data and take notes in their observation, and
- (d) require students to provide references with proper acknowledgement of sources and in-text citation techniques.

It is clear that students must first be made to understand plagiarism from academic and moral or ethical perspectives before any attempt is made to punish plagiarism offenders although ignorance of the law should never be made an an excuse not to impose penalties on plagiarists. In addition, students should also be given adequate opportunities to learn academic writing skills and enough time to prepare for the demands of tertiary level education. Lecturers and tutors on the other hand, should take plagiarism among students seriously by using manual and electronic means to detect any possible evidence of plagiarism besides constantly reviewing course materials and assessments. All these preventive measures however, must be practiced at all levels as standard procedures across all academic

institutions, which calls for development and implementation of institutional policies pertaining to plagiarism issues.

2.4 Implications of plagiarism

Different academic institutions may impose different scale of penalties, depending upon their definitions and interpretations of what plagiarism is, and the nature and extent of such plagiarism, as well as the level of study. However, all seem to agree in consensus that plagiarism is indeed a misconduct that violates the integrity and ethics of the academic world which has damaging consequences that range from deduction of marks and rejection of academic works thus graded as 'failure' to nullification of academic awards or degrees conferred, without fear or favour. Jones et. al. (2001) stressed the importance of consistency and proper documentation in dealing with plagiarism cases by suggesting general guidelines for instructors:

- (1) take the initiative to include penalties on plagiarism in the course synopsis and require students 'to sign an academic honesty agreement' (Jones et. al. 2001, p. 16) form,
- (2) be equipped with information about institutional policies regarding plagiarism and take plagiarism detection precautions,
- (3) carry out thorough investigation and background checking on the plagiarist's past and current records,
- (4) communicate with the student personally and in writing by using a notification memo or letter and let the student know his/her rights before bringing the matter to the attention of instructor's head of department, faculty administrators and the student's academic advisor if the situation remains unresolved,
- (5) be fair in handling all cases based on rules and regulations, and
- (6) maintain proper documentation.

Jones et. al. (2001) illustrates these stages in the following diagram:

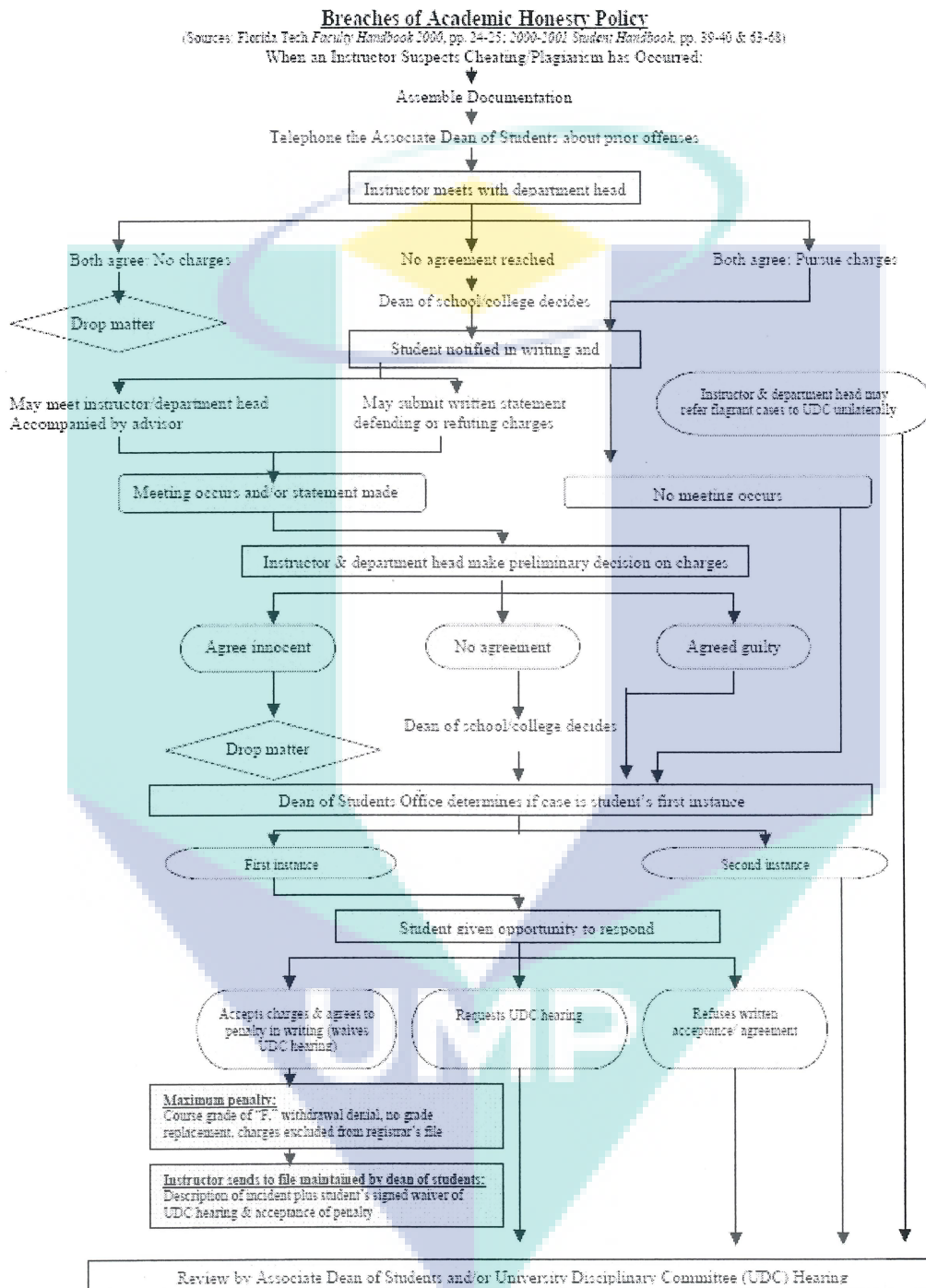


Fig. 1: Breaches of Academic Honesty Policy
 Source: Jones et. al. 2001, p. 22

As mentioned earlier, different scales of penalties exist as a result of different definitions, interpretations, nature and extent of plagiarism as well as level of study. The scales of penalties imposed on students found to have plagiarised their assignments may be summarised as follows:

- (a) deduction of marks for the specific assignment, which normally applies to cases of 'minor plagiarism' and 'bad practice not amounting to plagiarism' or 'pseudo-plagiarism',
- (b) complete failure of the specific assignment, which normally applies to 'slight' to 'moderate' plagiarism, cases of 'opportunist' plagiarists
- (c) lowering of grade for the entire course, which range from 'bad practice not amounting to plagiarism' to cases of 'accidental' and 'opportunist' plagiarists
- (d) graded as failure for the entire course, which applies to 'plagiarism outright', 'moderate' to 'serious' plagiarism
- (e) suspended for a certain period of study, in cases 'plagiarism outright' by deliberately copying directly the entire passages or paragraphs without any acknowledgement of sources,
- (f) expelled from the university, in extremely rare cases of total uplifting or very 'serious' plagiarism in which more than 50% of the entire work submitted has been plagiarised,
- (g) if the assignment is a major one leading to graduation requirements such as in the case of final year research report or dissertation, penalties imposed may include withdrawal of any academic award and degree conferred.

2.5 Conclusion

It is wrong to say that plagiarism occurs as a result of widespread use of technology because evidence shows that plagiarism has been in existence as early as in the 16th century. However, it is undeniable that

ICT has contributed to higher frequency of plagiarism among university students because of easy access to vast amount of information which may be overloaded. While different institutions may adopt different definitions of what constitutes as plagiarism, they have all agreed that plagiarism is a form of cheating by stealing words or ideas without acknowledging the original sources and this act is treated as a punishable offence if proven guilty. Various factors have been identified as reasons why students plagiarise their work, the most frequently identified being the demands and high expectations of university life in getting good grades for promising career prospects ahead and poor academic writing and time management skills.

Inculcation of strong moral values on academic ethics and implementation of study skills courses incorporating communication and personal development skills should be emphasised as preventive measures in improving level of awareness and understanding on plagiarism. To keep up with most updated practices and prepare for future trends and challenges in higher education, instructors need to be proactive in detecting plagiarism and dealing with it by developing course materials and modifying assessments that help to reduce elements of plagiarism in students' assignments. Standard procedures in carrying out institutional policies on plagiarism should also be devised and reviewed on regular basis to ensure fair practice without violating students' rights or any misuse of power.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 The study

This chapter explains the materials and methods in this study and its data collection and data analysis procedures. This research is a study which had adopted both quantitative and qualitative data collection and data analysis methods. Initially, researchers conducted two separate surveys among UMP students and academic staff respectively to investigate their awareness, understanding and views on plagiarism. Subsequently, this was followed by content analysis of UMP students' final year reports or *projek sarjana muda (PSM)* in order to determine whether online-linked plagiarism was evident so that further analysis could be made in terms of the extent and nature of such plagiarism. Ultimately, based on the findings, standard plagiarism guidelines for both lecturers and students were proposed.

3.1 The sample

In this mixed methods research, samples include the following:

(a) Students Participants in the student survey

61 students selected by means of convenience sampling from five different faculties at UMP. Inclusive criteria were UMP graduates who had submitted their *PSM*, and UMP final year students who had also submitted their *PSM*. This was necessary because each faculty has different start and end dates for *PSM*.

(b) Academic Staff Participants in the academic staff online survey

60 academic staff selected by means of simple random sampling from five faculties and two academic centres at UMP.

The faculties and centres are:

- Faculty of Civil and Environmental Engineering (FKASA)
- Faculty of Electrical and Electronic Engineering (FKEE)
- Faculty of Mechanical Engineering (FKM)
- Faculty of Chemical Engineering and Natural Resources (FKKSA)
- Faculty of Computer Systems and Software Engineering (FSKKP)
- Centre for Modern Languages and Human Sciences (CMLHS), and
- Centre for Technology Management (PPT).

(c) Projek Sarjana Muda (PSM) Final Report

Projek Sarjana Muda (PSM) is a compulsory individual project in which all final year degree students have to carry out. One of the requirements of the project is to write a 5-chapter report consisting of the chapters Introduction, Literature Review, Methodology, Finding and Discussion and Conclusion. Only the literature review of the report was analysed for plagiarism. Initially, it was agreed that the *PSM* would be randomly collected from each faculty; however, due to the different procedures required by each faculty, researchers decided to collect only 10 copies of *PSM* from FKM for data analysis.

3.2 Instrumentation and data collection procedures

The instruments used in this study were mostly developed by researchers themselves except for the use of *Plagiarism-Finder 1.0u*, a Germany-based product developed by Mediaphor Software Entertainment AG (henceforth Plagiarism-Finder Software or PFS). The instruments developed in this study consisted of the following:

- (a) For use in UMP student survey and UMP academic staff online survey: Plagiarism Questionnaire for Students (PlaQ-s) and Plagiarism Questionnaire for Lectures (PlaQ-l)
- (b) For use in manual content analysis of *PSM*: Plagiarism Analysis Framework (PAF).

3.2.1 Student survey using PlaQ-s

The first of the five instruments, PlaQ-s (see Appendix A) consisted of three sections: A, B and C. Section A required respondents to indicate their faculty and gender while Section B comprised five items which were constructed in the form of:

- (a) Yes-No dichotomy of respondents' knowledge on what is plagiarism and its legality,
- (b) Multiple choice questions with option to multiple appropriate answers on their opinions of what is plagiarism, why plagiarism is considered legally wrong and why students plagiarise, and
- (c) Three-scale rating of 10 possible plagiarism scenarios asking the respondents to provide their judgement.

The purpose of PlaQ-s was basically to investigate UMP students' awareness and understanding of the extent and nature of plagiarism, as well as to obtain their views on the possible causes to the act of plagiarism.

Pilot test of PlaQ-s was carried out in order to determine the reliability for the internal consistency of the items for section C since it contains scale-based items. The result of Cronbach's Alpha for section C is shown below:

Table 2: Result of Cronbach Alpha for section C of PlaQ-s

| | |
|-----------------------------------|---------------------------------|
| Reliability Coefficients 10 items | |
| N of Cases = 13.0 | |
| Alpha = .8159 | Standardized item alpha = .8159 |

The internal consistency result of section C of PlaQ-s showed that the score has achieved above the required 0.70 of reliability for internal consistency of items. This score, however, was achieved after four of the original 14 items were deleted. With this rectification, the total number of items for section C was reduced to 10 before the validated PlaQ-s was subsequently administered.

3.2.2 Academic staff online survey using PlaQ-I

PlaQ-I (see Appendix B) had two sections: A and B. The survey was conducted online in which PlaQ-I was triggered arbitrarily to all the lecturers in UMP in the UMP electronic community (e-comm). To maintain anonymity and encourage participation, no personal and demographic information was collected.

Section A comprised eight items which were constructed in the form of:

- (a) Five yes-no dichotomy items exploring the respondents' awareness, understanding and views of the definition of

plagiarism, its legality, and availability of the acts and policies on plagiarism,

- (b) One extended subjective question on respondents' awareness, understanding and views of other universities' acts and policies on plagiarism, and
- (c) Three multiple choice questions on respondents' awareness, understanding and views on what plagiarism is, why it is legally wrong, and the types of penalty to be applied to plagiarism should it be evident at UMP.

Section B consisted of three scenarios depicting three levels or degrees of plagiarism with multiple options on the penalties for plagiarism at three different levels. The options provided differ according to the level or degree of seriousness of the offence.

Similarly, the purpose of PlaQ-1 was basically to investigate UMP's lecturers' awareness, understanding and views on plagiarism and any related legal implications, and sought their opinions on how plagiarists should be penalised at UMP.

3.2.3 Electronic content analysis using PFS

PFS is a software that is easy to use, and the manual provides a step-by-step approach of how to use the program. Figure 2 depicts the screenshot of the main page of the program (Weilage, 2004).

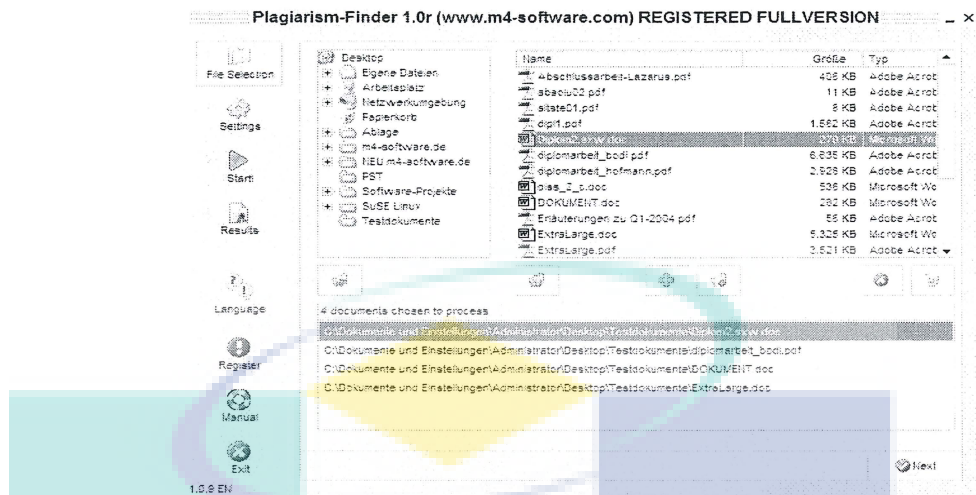


Fig. 2: Screenshot of *Plagiarism-Finder 1.0u*

In PFS features description, Wielage (2004) stated that the supported file formats for plagiarism analysis using PFS include Microsoft Word (.doc), plain text (.txt), Rich Text (.rtf), HTML (.html and .htm) or Adobe Acrobat (.pdf) documents. However, it should be noted that in this study, PFS was not able to read and analyse the *PSM* in Adobe Acrobat (.pdf). Consequently, researchers had to convert all files into Microsoft Word (.doc) format before the *PSM* could be analysed by the PFS.

3.2.4 Manual content analysis using PAF

In order to obtain a more detailed and meaningful examination of students' *PSM*, researchers in this study had developed another instrument, Plagiarism Analysis Framework (PAF). This framework was developed to enable researchers to specifically identify the types of plagiarism together with descriptions of each type, if found to be evident, in students' *PSM*. Nine types of plagiarism were proposed, seven textual-

based while the remaining two, graphical or non-textual, as shown in the following table:

Table 3: Plagiarism Analysis Framework (PAF)

| Type | Style | Description |
|------|--|---|
| A | Paragraph Total Lifting | The whole paragraph is lifted. The paragraph can be lifted from one single Internet source or from two or more Internet sources which are combined into one single paragraph. No citation is provided. |
| B | Paragraph Total Lifting with Citation | The whole paragraph is lifted, mostly from one single source. The original sentences are not paraphrased but in-text citation is provided. |
| C | Paragraph Total Lifting with Wrong Reference | The whole paragraph is lifted, mostly from one single source. The original sentences are not paraphrased. The in-text citation provided is different from which the original source is actually from. The correct reference is not included in the student's reference. |
| D | Paragraph Lifting with a few Words Changed or Deleted | The whole paragraph is lifted; however, several words (not more than 5) have been deleted or changed with the synonyms. For instance, changing 'however' to 'on the contrary' or 'automobile' to 'car'. No citation is provided. |
| E | Paragraph Idea Lifting | The idea of the whole paragraph from one sentence to the next is lifted but the original sentences are paraphrased. No citation is provided. |
| F | Paragraph Partly Lifted with Phrases and/or Clauses Deleted, Added and/or Reworded | The paragraph is partly (50% or more) lifted. Some phrases and clauses are added, deleted or reworded from the original sentences to ensure suitability to the context of the student's writing. |
| G | Paragraph Partly Lifted with Clauses or Sentences Combined or Divided | The paragraph is partly (50% or more) lifted. Some original sentences which are long are cut into two shorter sentences, or short sentences combined into one long sentence. |
| H | Informative Graphics | Tables or results of other writers written in graphical forms are lifted without any citation. Only minor changes are made; for instance, the product name of the original writer is changed into the student's product. |
| I | Pictures | Pictures or photos which are taken from the same source the information are lifted. No citation is provided. |

3.3 Data analysis procedures

After questionnaires had been administered among UMP students and academic staff, data analysis was carried out by using *SPSS ver. 11.1*. Meanwhile, for electronic content analysis, chapter two of randomly selected *PSM* which had been converted into Microsoft Word (.doc) format were analysed using PFS. Plagiarism in a document is examined by PFS using internet search engines enquiring on 5 to 10 combined words. Any combined 5-10 words detected from the internet will be considered as plagiarism by the program. Users, however, can change the length of the combined words depending on the purpose and setting. The program offers three types of setting for plagiarism analysis which are:

- (1) detailed examination,
- (2) normal examination, and
- (3) random examination.

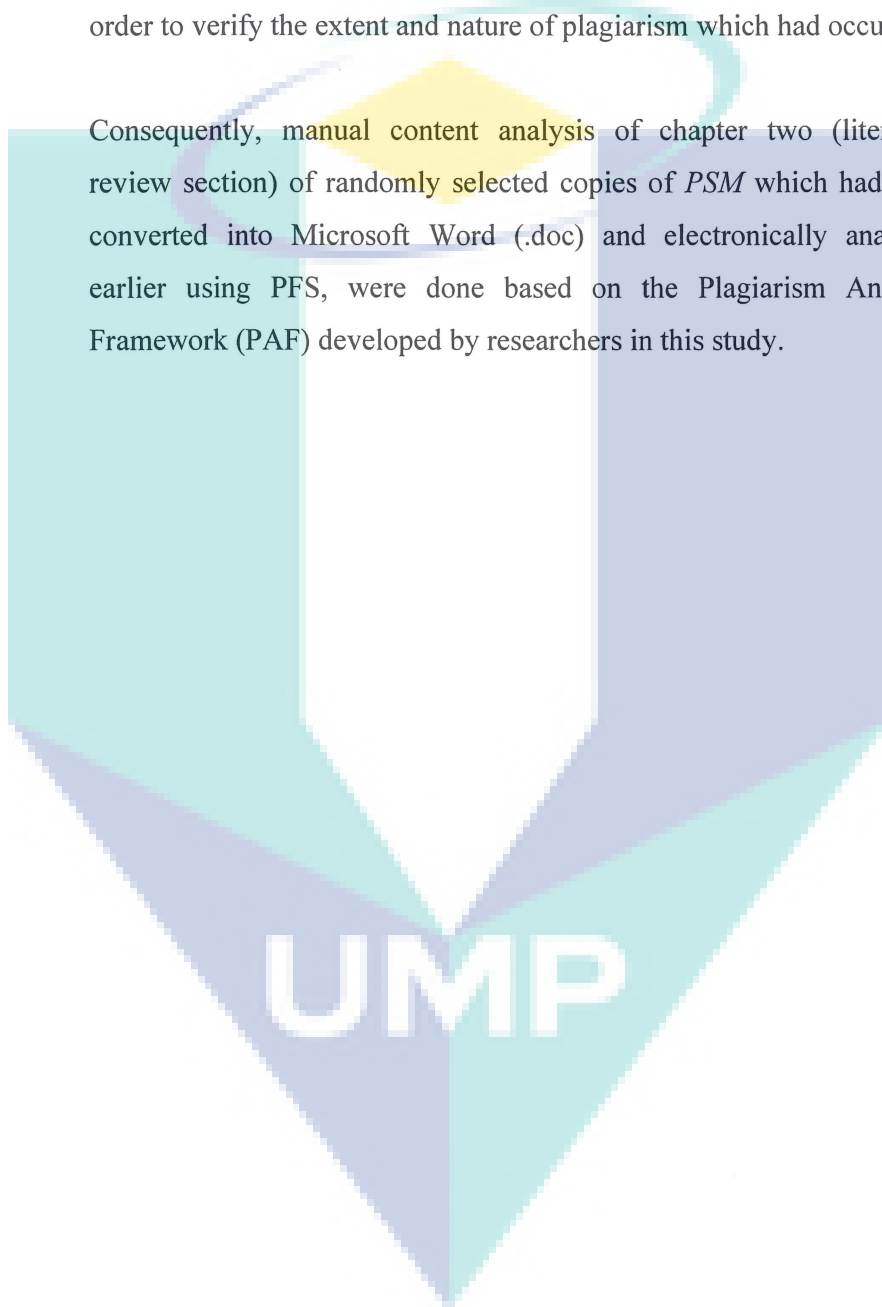
The program suggests a sentence length of 7 to 10 words set to the detailed examination setting for documents believed to be plagiarising from the internet. The researchers, therefore, used this criterion for the *PSM* analysis. Upon completion of data analysis, the reports or results computed by PFS were presented in .html format, were kept in the result folder in the program. These results were later downloaded from the folder in PFS and saved as individual report in a separate folder. The report of the analysis contained the following information:

- (a) filename of the document analysed,
- (b) the date of the results of the analysis,
- (c) the number of words analysed in the examination,
- (d) Universal Resource Locator or URL address(es) from which the plagiarised information was found (if any),
- (e) the type of setting used, either detailed, normal or random, and

- (f) the percentage of the congruency words in the document found in the internet.

Further checking on the identified URL addresses was done by clicking on the hyperlinks generated by the report of the analysis in order to verify the extent and nature of plagiarism which had occurred.

Consequently, manual content analysis of chapter two (literature review section) of randomly selected copies of *PSM* which had been converted into Microsoft Word (.doc) and electronically analysed earlier using PFS, were done based on the Plagiarism Analysis Framework (PAF) developed by researchers in this study.



CHAPTER 4

FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter presents the findings of the study and discussions that lead to the conclusions and recommendations later in the final chapter. As explained in the previous chapter, demographic data could only be obtained from the student survey as the academic staff online survey did not require respondents to reveal any information about their faculty or gender. Only descriptive statistics were performed with the use of *SPSS ver 11.1* on the data analysis of both surveys. In addition, electronic content analysis of 10 copies of *PSM* from one faculty (FKM) using Plagiarism Finder Software (PFS) had also yielded descriptive statistics. Although the manual content analysis of the same 10 copies of *PSM* was eventually done qualitatively based on the Plagiarism Analysis Framework (PAF), this had also ultimately produced descriptive statistics.

4.1 Demographic data of respondents in plagiarism surveys

In section A of the student survey, respondents were required to indicate their respective faculties. Based on the student survey, the following demographic data of the student respondents were obtained:

Table 4: Distribution of student sample by faculty

| Faculty | Frequency | Percentage (%) |
|--------------|-----------|----------------|
| FKASA | 16 | 26.2 |
| FKEE | 12 | 19.7 |
| FKM | 19 | 31.1 |
| FKKSA | 3 | 4.9 |
| FSKKP | 11 | 18.0 |
| Total | 61 | 100 |

Students' participation in this study was based on the inclusive criteria explained in the third chapter (Research Methodology) of this report. All faculties were represented in this study, though FKKSA was underrepresented with less than 5% of the whole sample. The rest of the faculties were almost equally represented within the range of 18% to 26%. Only FKM was overly represented at 31%, more than 10% of the average 20%, as a result of underrepresented FKKSA. As for the academic staff online survey, a total of 60 respondents returned the online questionnaire posted in the staff e-comm.

4.2 Analysis of plagiarism surveys

The analysis was first done on the returned questionnaires of the student survey, followed by the one on the automatically triggered completed questionnaires of the academic staff online survey.

4.2.1 Student survey

In section B of the questionnaire in the student survey, respondents were required to indicate their option based on the following questions:

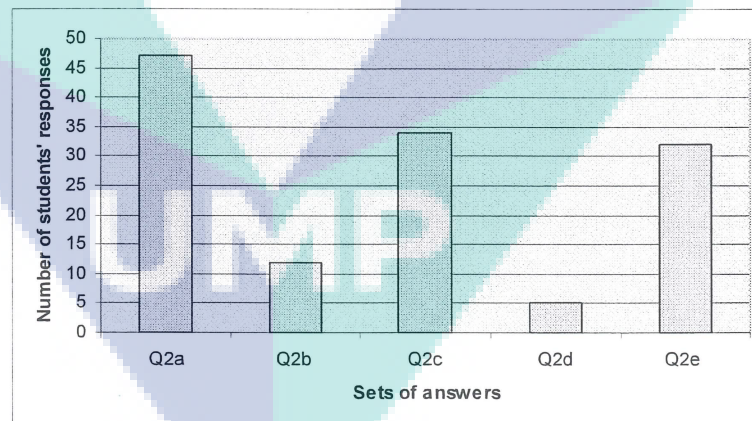
1. *Q1-Do you know what plagiarism is?*
2. *Q2-In your opinion, what is plagiarism?*
3. *Q3-Do you think plagiarism is legally wrong?*
4. *Q4-In your opinion, why do students plagiarise?*

Based on the student survey, apparently nearly 90% of respondents were convinced that they knew what plagiarism is. The remaining 10% was shared almost equally between 'No' and 'Not Sure' with 3 students (4.9%) choosing for the former and 4 students (6.6%) opted for the latter, as shown in the following table:

Table 5: Frequency and percentage of students' awareness on plagiarism (Q1)

| | | Frequency | Percentage (%) |
|-------|--------------|-----------|----------------|
| Valid | Yes | 54 | 88.5 |
| | No | 3 | 4.9 |
| | Not sure | 4 | 6.6 |
| | Total | 61 | 100.0 |

Upon answering what plagiarism is, 77.0% (47 students) chose Q2a where they agreed that the definition for plagiarism was 'using someone else's words as if they were their own'. 19.7% (12 students) answered Q2b deciding that 'getting their ideas from the text book' was the definition for plagiarism. Q2c and Q2e were chosen by 55.7% (34 students) who answered that plagiarism was 'using someone else's result as if they were their own' and 52.5% (32 students) who agreed that 'sharing work with someone else and pooling ideas' was also considered plagiarism. Only 8.2% (5 students) regarded 'using someone else's ideas as if they were your own' as plagiarism.



Legend:

- Q2a = 'using someone else's words as if they were their own'
- Q2b = 'getting their ideas from the textbook'
- Q2c = 'using someone else's results as if they were their own'
- Q2d = 'sharing work with someone else and pooling ideas'
- Q2e = 'using someone else's ideas as if they were your own'

Fig. 3: Students' responses to what plagiarism is (Q2)

Students also gave their feedback to the question of plagiarism from legal point of view (Q3). Statistics showed that the percentage of students who thought plagiarism was legally wrong accounted for 50.8% (31 students), almost equalled the percentage of students who thought otherwise, those were not sure and one respondent who did not attempt combined together, being 23.0% (14 students), 24.6% (15 students) and 1.6% (1 student) respectively (see Table 6).

Table 6: Students' responses to the legality of plagiarism (Q3)

| | | Frequency | Percentage (%) |
|---------------|---------------------------------|-----------|----------------|
| Valid | Yes | 31 | 50.8 |
| | No | 14 | 23.0 |
| | Not sure | 15 | 24.6 |
| Missing value | Did not attempt (missing value) | 1 | 1.6 |
| Total | | 61 | 100.0 |

For those who answered 'Yes' for Q3 as shown in Table 6 above, they were required to further clarify why they thought plagiarism was legally wrong. Figure 4 shows 41.0% (25 students) perceived plagiarism as legally wrong because 'it is dishonest' (Q3b), followed by 32.7% (20 students) who agreed that plagiarism was legally wrong because 'you don't learn anything by copying someone else's work' (Q3d). Both Q3c and Q3e were shared the third spot with 26.2% (16 students) choosing 'assignments that are plagiarised fail to demonstrate your knowledge of the work' and 'it steals other people's ideas' while only 19.7% (12 students) viewed plagiarism as legally wrong because 'you may be penalised'.

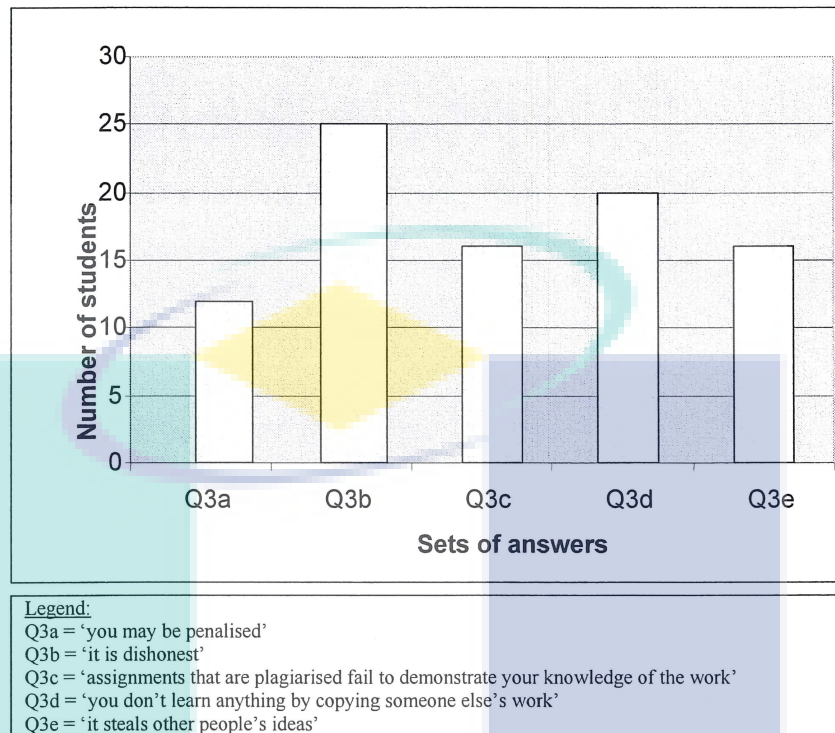


Fig. 4: Students' responses to why plagiarism is legally wrong (Q3)

When asked why students plagiarised their work, 'a quick way to finish assignment' (Q4b) topped the list of reasons why respondents thought students plagiarised their work with 82.0% (50 students) choosing this option. 'To get good grades' (Q4a) and 'Lack of knowledge in citing sources' (Q4c) were next with 55.7% (34 students) answering these two options as their reasons why plagiarism occurred. The least possible reasons according to respondents were 'Practised by fellow students' (Q4e) and 'No knowledge on plagiarism' (Q4d) with 34.4% (21 students) and 19.7% (12 students) respectively.

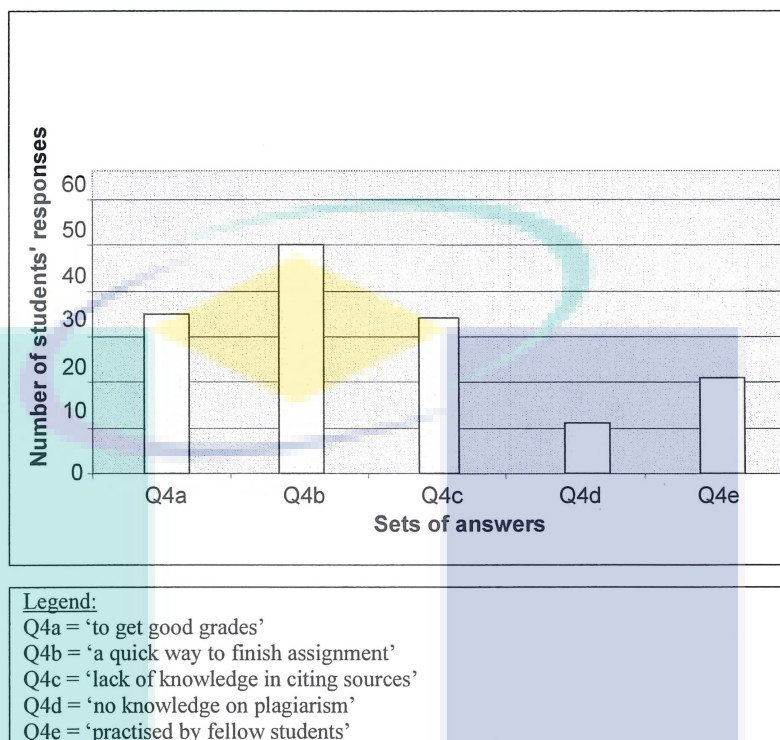


Fig. 5: Students' responses to why plagiarism occurs (Q4)

In section C of the student survey, a total of 10 different scenarios were presented to the respondents and they were asked to indicate whether each of the 10 scenarios was either 'Unacceptable', 'Not Sure' or 'Acceptable'. As shown in the Table 7, while 68.9% (42 students) agreed that 'take a student's assignment from a lecturer's pigeon hole and copy it' (Sc5) was clearly a case of plagiarism, 'synthesize two internet articles into one paragraph' (Sc4) and 'copy illustrations from the internet but change the terminology' (Sc6) were viewed as 'Acceptable' by 57.4% (35 students) and 39.3% (24 students) of the respondents respectively, with 6.6% (4 students) and 27.9% (17 students) disagreeing, 36.1% (22 students) and 32.8% (20 students) unsure, in each of the two scenarios.

Table 7: Students' responses to 10 scenarios of plagiarism

| NO. | SCENARIO (Sc) | SCALE | | |
|------|---|--------------|----------|------------|
| | | Unacceptable | Not Sure | Acceptable |
| Sc1 | Take an idea from the internet but expand it using your own words. | 6 | 4 | 51 |
| Sc2 | Cooperate with a friend on an assignment meant to be completed individually. | 8 | 15 | 38 |
| Sc3 | Show assignment to a lecturer for guidance. | 7 | 7 | 47 |
| Sc4 | Synthesize two internet articles into one paragraph. | 4 | 22 | 35 |
| Sc5 | Take a student's assignment from a lecturer's pigeon hole and copy it. | 42 | 13 | 6 |
| Sc6 | Copy illustrations from the internet but change the terminology. | 17 | 20 | 24 |
| Sc7 | Resubmit an assignment from a previous subject in a new subject. | 21 | 29 | 11 |
| Sc8 | Ask someone's help to do proper citation for your work. | 18 | 13 | 30 |
| Sc9 | Copy material for an essay from the Internet. | 18 | 24 | 19 |
| Sc10 | Submit an assignment using a different format of citation as required by lecturers. | 16 | 28 | 17 |

Ironically, respondents who viewed 'copy material for an essay from the Internet' (Sc9) and 'submit an assignment using a different format as required by lecturers' (Sc10) as 'Acceptable' were slightly more than those who thought otherwise, a difference by 1.6% (1 student) in both scenarios, favouring the affirmative. Another look at Sc7 also indicates that while 34.4% (21 students) perceived 'resubmit an assignment from previous subject in a new subject' as 'Unacceptable' and only 18.0% (11 students) disagreed, 47.5% (29 students) were unsure, 13.1% more than the percentage of respondents who agreed that Sc7 was plagiarism. This was the

highest percentage of uncertainty at 47.5% (29 students), followed by Sc10, Sc9, Sc4 and Sc6 with 45.9% (28 students), 39.3% (24 students), 36.1% (22 students) and (20 students) respectively.

4.2.2 Academic staff online survey

Meanwhile, in the academic staff online survey, the questionnaire was divided into two sections, A and B. In section A, lecturers were asked to respond to seven items concerning:

- (1) Q1-their awareness on plagiarism,
- (2) Q2-what plagiarism is,
- (3) Q3-whether plagiarism is morally wrong,
- (4) Q4-the reason(s) why plagiarism is morally wrong if they thought so,
- (5) Q5-whether unintentional plagiarism is still considered plagiarism,
- (6) Q6-their awareness of acts or policies with regard to plagiarism in Malaysia, and
- (7) Q7-if found to be evident, the implications of being accused of plagiarism at UMP.

Table 8 shows that out of 60 lecturers who participated in the online survey, 86.7% (52) of them understood what plagiarism was. Surprisingly, there were still 5 or 8.3% who were not sure of the term and 2 or 3.3% who did not have the idea of its definition. One respondent failed to answer the question and thus resulted in one missing value during data analysis.

Table 8: Frequency and percentage of lecturers' awareness on plagiarism (Q1)

| | | Frequency | Percentage (%) |
|---------------|-----------------|-----------|----------------|
| Valid | Yes | 52 | 86.7 |
| | No | 2 | 3.3 |
| | Not Sure | 5 | 8.3 |
| Missing Value | Did not attempt | 1 | 1.7 |
| Total | | 60 | 100.0 |

In response to what plagiarism is (Q2), Q2a which is 'Copying of sentences, paragraphs or creative products which are the work of other persons (including books, articles, theses, unpublished works, working papers, seminars and conference papers, internal reports, lecture notes or tapes) without due acknowledgement' was top on the list of what lecturers viewed as plagiarism, with 96.7% (58) of them agreeing that this was the most commonly accepted definition of plagiarism. As shown in Table 9, this was followed by:

- (a) Q2c – 'Using another person's work(s) (including words, music, computer source code, creative or visual artifacts, designs or ideas) or research data without due acknowledgement', with 76.7% (46)
- (b) Q2f – 'Submitting previously assessed or published work for assessment or publication elsewhere, without permission or acknowledgement (self-plagiarism)', with 63.3% (38),
- (c) Q2e – 'Copying or submitting computer files, code or website content in whole or in part without indicating their origin', with 60.0% (36),
- (d) Q2d – 'Submitting work which has been produced by someone else (e.g. allowing or contracting another person

to do the work for which you claim authorship)', with 55.0% (33),

(e) Q2b – 'Too closely paraphrasing sentences, paragraphs or themes', with 36.7% (22), and

(f) Q2g – 'In the case of group projects, falsely representing the individual contributions of collaborating partners', with 35.0% (21).

Table 9: Lecturers' responses to what plagiarism is (Q2)

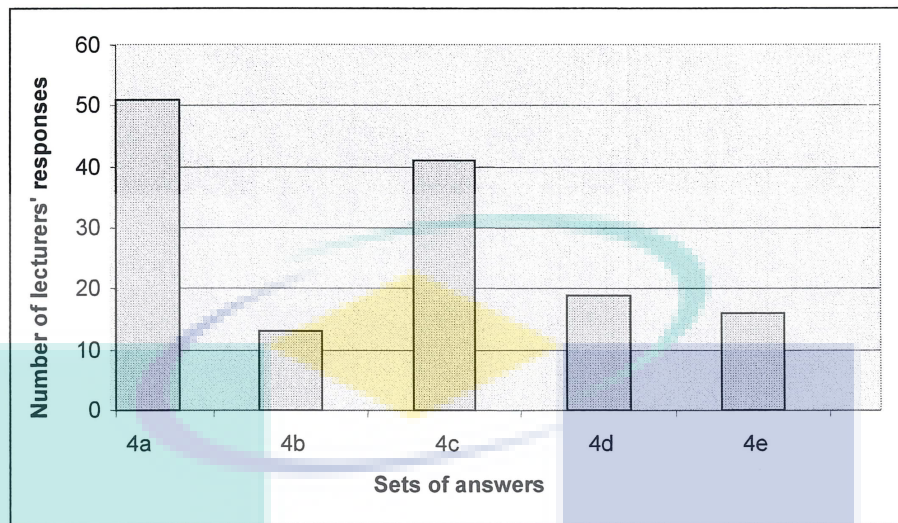
| No. | Options | Number of Responses | Percentage of Responses (%) |
|-----|---|---------------------|-----------------------------|
| Q2a | Copying of sentences, paragraphs or creative products which are the work of other persons (including books, articles, theses, unpublished works, working papers, seminars and conference papers, internal reports, lecture notes or tapes) without due acknowledgement. | 58 | 96.7 |
| Q2b | Too closely paraphrasing sentences, paragraphs or themes. | 22 | 36.7 |
| Q2c | Using another person's work(s) (including words, music, computer source code, creative or visual artifacts, designs or ideas) or research data without due acknowledgement. | 46 | 76.7 |
| Q2d | Submitting work which has been produced by someone else (e.g. allowing or contracting another person to do the work for which you claim authorship). | 33 | 55.0 |
| Q2e | Copying or submitting computer files, code or website content in whole or in part without indicating their origin | 36 | 60.0 |
| Q2f | Submitting previously assessed or published work for assessment or publication elsewhere, without permission or acknowledgement (self-plagiarism). | 38 | 63.3 |
| Q2g | In the case of group projects, falsely representing the individual contributions of collaborating partners. | 21 | 35.0 |

Lecturers were also asked whether plagiarism was morally wrong. To this, 90.0% (54) of them decided that committing plagiarism was immoral, 5.0% (3 lecturers) believed the action was not morally wrong while the remaining 3.3% (2 lecturers) were undecided on the issue. One respondent (1.7%) did not attempt, as indicated in the following table:

Table 10: Lecturers' responses to whether plagiarism is morally wrong (Q3)

| | | Frequency | Percentage (%) |
|---------------|-----------------|-----------|----------------|
| Valid | Yes | 54 | 90.0 |
| | No | 3 | 5.0 |
| | Not sure | 2 | 3.3 |
| Missing value | Did not attempt | 1 | 1.7 |
| Total | | 60 | 100.0 |

For 54 respondents who said 'Yes' in Q3 above, they were further required to respond to Q4, indicating reason(s) why they thought plagiarism to be morally wrong. High percentage in Q4a (85.0% or 51 lecturers) and Q4c (68.3% or 41 lecturers) in Figure 6 indicates that lecturers viewed plagiarism as unethical and showing lack of academic integrity. Other reasons were thought not to be strong enough for plagiarism to be regarded as morally wrong in the academic community.



Legend:

Q4a = 'It means cheating; which violates honesty, fairness and responsibility and leads to reduced trust and respect'

Q4b = 'It deprives learning opportunities'

Q4c = 'It indicates lack of academic integrity; could not resist the temptation to cheat and help to create an atmosphere where cheating is an acceptable act'

Q4d = 'It devalues your own work/ degree'

Q4e = 'Once started, it is a cycle that can be hard to break and leads to lowered self-esteem'

Fig. 6: Lecturers' responses to why plagiarism is morally wrong (Q4)

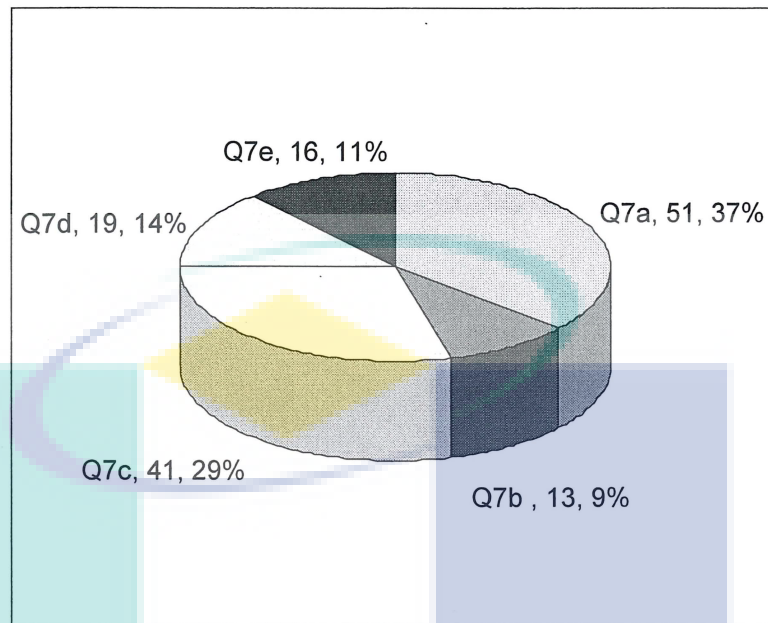
In answering whether unintentional plagiarism is still considered as plagiarism (Q5), 90.0% (54 lecturers) agreed while 5.0% (3 lecturers) believed otherwise. Only 3.3% (2 lecturers) were not sure and one respondent (1.7%) did not attempt, as shown in the following table:

Table 11: Lecturers' responses to whether unintentional plagiarism is still considered as plagiarism (Q5)

| | | Frequency | Percentage (%) |
|---------------|-----------------|-----------|----------------|
| Valid | Yes | 54 | 90.0 |
| | No | 3 | 5.0 |
| | Not sure | 2 | 3.3 |
| Missing value | Did not attempt | 1 | 1.7 |
| Total | | 60 | 100.0 |

On responding to their awareness of acts or policies on plagiarism (Q6), 98.3% or 59 out of total number of 60 lecturers indicated that they were aware of such acts or policies. Only one respondent did not attempt.

Finally, lecturers were also asked the implications of plagiarism at UMP, if found to be evident (Q7). 37% (51 lecturers) believed that Q7a ('will be given the opportunity to explain actions and possibly advised to undertake a short course on academic writing') was the most possible implication of plagiarism. However, 29% (41 respondents) also agreed that penalty could be imposed if found guilty (Q7c). The other two implications, Q7b ('will only be given a warning or advice') and Q7d ('only rewrite / redo the course work that is found to be plagiarised') accounted for 14% (19 lecturers) and 9% (13 lecturers) respectively. It was however interesting to note that 11% (16 lecturers) did choose Q7e ('no action will be taken') as their answers, 2% more than Q7b.



Legend
 Q7a = 'Will be given the opportunity to explain actions and possibly advised to undertake a short course on academic writing'
 Q7b = 'Will only be given a warning or advice'
 Q7c = 'Penalty could be imposed if found guilty'
 Q7d = 'Only rewrite / redo the course work that is found to be plagiarised'
 Q7e = 'No action will be taken'

Fig. 7: Lecturers' response to implications of plagiarism at UMP if found evident

In section B of the academic staff online survey, respondents were presented with three scenarios, each categorised into three levels in which respondents were requested to make their recommendation(s) on what penalties should be imposed on students committing such plagiarism.

(1) Level I:

It is due to a person's inexperienced or lack of knowledge of conventions or ways for referencing, such as poor use of paraphrasing. This is not usually considered to be academic misconduct, but is still considered unacceptable. It might be excused at the beginning of a course but it will be viewed seriously in later semesters.

(2) Level II:

It is more serious than the first level where the work demonstrates:

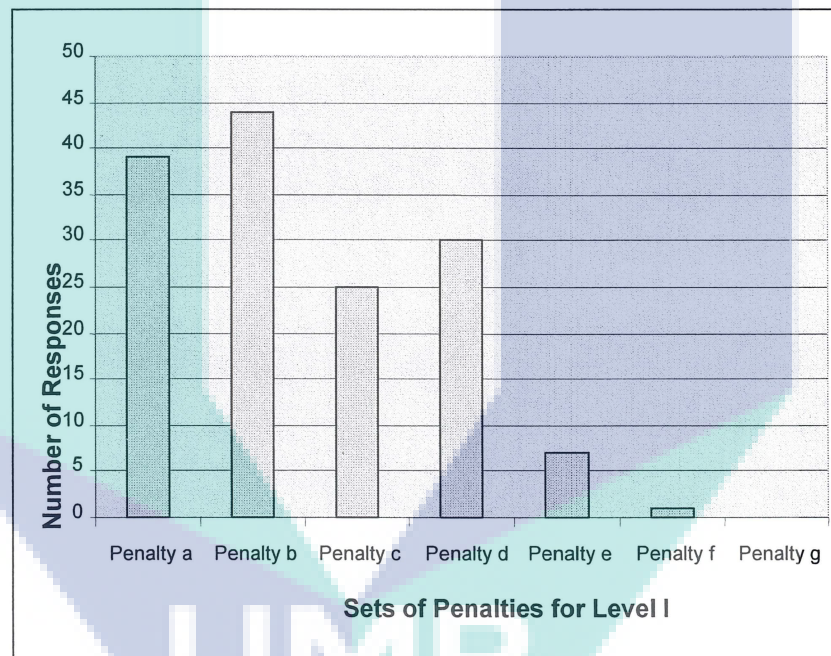
- *A few copied paragraphs of work, very poor attempts at paraphrasing or misuse of a small amount of computer source code etc., without reasonable attempts to acknowledge the source, even though much of the original work is included, or*
- *A few tries of short cuts by cheating, such as by cutting and pasting small sections of work from others authors and not acknowledging their work, or copying small sections of work from other students.*

(3) Level III:

This is a very serious level and will be dealt at the University level. More than 10 per cent of the work is found to be copied, taken from a website, derived from other person's assignment or submitted work presented by other person.

To these three levels of plagiarism, lecturers' responses were as shown in Figure 8 (for Level I), Figure 9 (for Level II) and Figure 10 (for Level III). For Level I, the order of preference for penalties is as follows:

- (i) Penalty b (suggested by 73.3% or 44 lecturers),
- (ii) Penalty a (suggested by 65.0% or 39 lecturers),
- (iii) Penalty d (suggested by 50.0% or 30 lecturers),
- (iv) Penalty c (suggested by 27.1% or 25 lecturers),
- (v) Penalty e (suggested by 11.7% or 7 lecturers), and
- (vi) Penalty f (suggested by 1.7% or 1 lecturer).

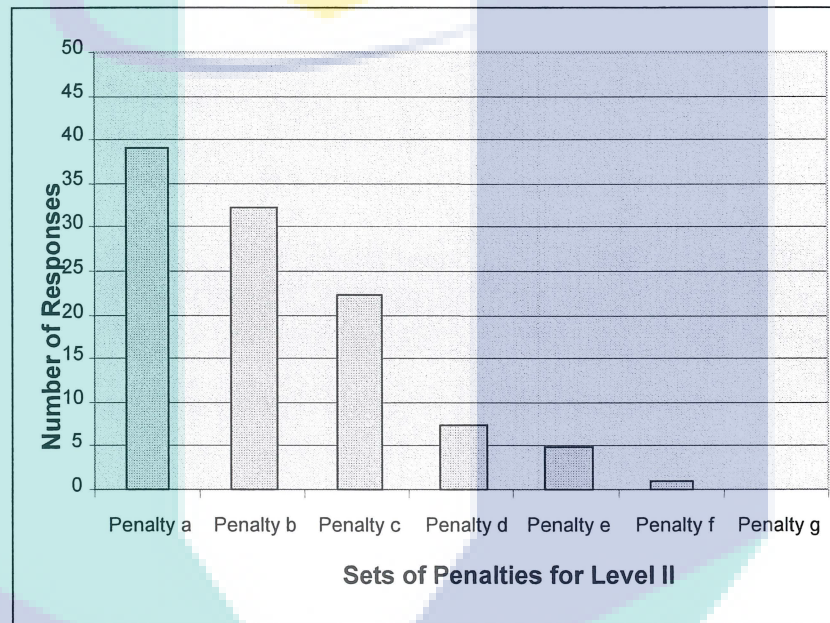


Legend:
 Penalty a = Send for a short course on academic writing
 Penalty b = Provide a chance to redo or resubmit new work
 Penalty c = Receive an advice
 Penalty d = Receive a warning
 Penalty e = Get a fail grade for the course work
 Penalty f = No action taken
 Penalty g = Others (Please state)

Fig. 8: Lecturers' responses to penalties for Plagiarism Level I

For Level II, the order of preference for penalties is as follows:

- (i) Penalty a (suggested by 61.7% or 37 lecturers),
- (ii) Penalty b (suggested by 55.0% or 33 lecturers),
- (iii) Penalty c (suggested by 35.0% or 21 lecturers),
- (iv) Penalty d (suggested by 11.0% or 6 lecturers),
- (v) Penalty e (suggested by 6.7% or 4 lecturers), and
- (vi) Penalty f (suggested by 3.3% or 2 lecturers).

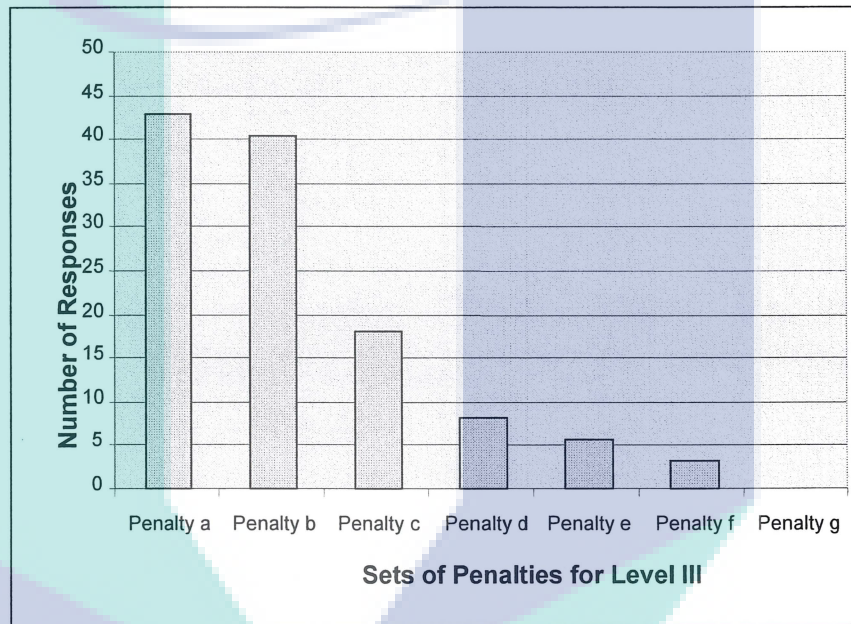


Legend:
Penalty a = Redo the assessment (but with reduced maximum mark)
Penalty b = Nil mark for the part of the assessment that is affected
Penalty c = Nil mark for the assessment
Penalty d = Fail the course
Penalty e = Suspension of the rights and privileges of enrolment for a period of time
Penalty f = No action taken
Penalty g = Others (Please state)

Fig. 9: Lecturers' responses to penalties for Plagiarism Level II

For Level III, the order of preference for penalties is as follows:

- (i) Penalty a (suggested by 71.7% or 43 lecturers),
- (ii) Penalty b (suggested by 46.7% or 39 lecturers),
- (iii) Penalty c (suggested by 30.0% or 18 lecturers),
- (iv) Penalty d (suggested by 15.0% or 9 lecturers),
- (v) Penalty e (suggested by 10.0% or 6 lecturers), and
- (vi) Penalty f (suggested by 6.7% or 4 lecturers).



Legend:
Penalty a = Nil mark for the assessment/ all assessments in the course
Penalty b = Annulled grade for the course
Penalty c = Suspension of the rights and privileges of enrolment for a period of time
Penalty d = Exclusion from the University for a period of up to one year
Penalty e = Refusal to enroll
Penalty f = Expulsion from the university
Penalty g = Others (Please state)

Fig. 10: Lecturers' responses to penalties for Plagiarism Level III

In all three levels, penalty g was left unchecked by all respondents. Therefore no additional possible penalties added to the list of options provided in the questionnaire.

4.3 Analysis of students' PSM

Students' PSM were initially analysed using Plagiarism Finder Software (PFS). Later, the same PSMs were analysed manually using the Plagiarism Analysis Framework (PAF). In both analyses, only the literature review section of each PSM was used.

4.3.1 Electronic analysis using PFS

The following table summarises the report generated by the electronic analysis using PFS. From the electronic analysis, it was found that the percentage of congruent words found in the internet was under 5%, the highest being 4% (PSM ID Code 03028), the lowest which was also the most frequent of ten cases analysed, was 1% (PSM ID Codes 03014, 03019 and 03026). One case was reported to be virtually free from any congruent words found in the internet (PSM ID Code 03032), as shown in the following table:

Table 12: Summary of report of FKM students' PSM analysis using PFS

| No | PSM ID Code | Criteria for examination | No. of words examined | Congruent words found in internet | Percentage of congruent words found in internet (%) |
|----|-------------|---|-----------------------|-----------------------------------|---|
| 1 | 03002 | | 4067 | 132 | 3 |
| 2 | 03012 | <ul style="list-style-type: none"> Record length of 7 words with 5 words increment 100% of all numbered words were examined | 4347 | 144 | 3 |
| 3 | 03013 | | 2407 | 42 | 2 |
| 4 | 03014 | | 2346 | 12 | 1 |
| 5 | 03019 | | 2316 | 12 | 1 |
| 6 | 03021 | | 5490 | 84 | 2 |
| 7 | 03026 | | 3546 | 24 | 1 |
| 8 | 03028 | | 1638 | 72 | 4 |
| 9 | 03031 | | 3386 | 18 | 1 |
| 10 | 03032 | | 3210 | 0 | 0 |

While the links provided by PFS were useful in detecting possible cases of plagiarism, researchers in this study decided to extend the analysis by manual means.

4.3.2 Manual analysis using PAF

Using the Plagiarism Analysis Framework (PAF) as shown in Table 3 in section 3.2.4 of chapter 3 (Research Methodology) in this report earlier, researchers managed to obtain more data on plagiarism in students' *PSM*. Table 13a and Table 13b present the results of manual analysis of textual plagiarism while Table 13a and Table 13b uncover the non-textual plagiarism in students' *PSM*.

Table 13a: Frequency and percentage of individual textual plagiarism at FKM according to type

| No | PSM ID Code | Total number of paragraphs analysed | Total number of paragraphs plagiarised according to type (percentage, %) | | | | | | | Paragraphs plagiarised (percentage, %) per PSM |
|----|-------------|-------------------------------------|--|------------|----------|-----------|---|-----------|---|--|
| | | | A | B | C | D | E | F | G | |
| 1 | 03002 | 26 | 2 (7.7%) | 2 (7.7%) | 0 | 3 (11.5%) | 0 | 5 (19.2%) | 0 | 12 (46.1%) |
| 2 | 03012 | 32 | 3 (9.4%) | 0 | 0 | 1 (3.1%) | 0 | 3 (9.4%) | 0 | 7 (21.9%) |
| 3 | 03013 | 21 | 3 (14.3%) | 0 | 0 | 0 | 0 | 6 (28.6%) | 0 | 9 (42.9%) |
| 4 | 03014 | 30 | 4 (13.3%) | 0 | 0 | 0 | 0 | 2 (6.6%) | 0 | 6 (19.9%) |
| 5 | 03019 | 54 | 7 (13%) | 1 (1.9%) | 0 | 0 | 0 | 2 (3.7%) | 0 | 10 (18.6%) |
| 6 | 03021 | 43 | 5 (11.6%) | 0 | 1 (2.3%) | 0 | 0 | 2 (4.65%) | 0 | 8 (18.6%) |
| 7 | 03026 | 56 | 0 | 1 (1.8%) | 0 | 0 | 0 | 2 (3.6%) | 0 | 3 (5.4%) |
| 8 | 03028 | 30 | 1 (3.3%) | 0 | 0 | 1 (3.3%) | 0 | 0 | 0 | 2 (6.6%) |
| 9 | 03031 | 34 | 26 (76.5%) | 0 | 0 | 0 | 0 | 1 (2.9%) | 0 | 27 (79.4%) |
| 10 | 03032 | 38 | 0 | 18 (47.4%) | 0 | 0 | 0 | 0 | 0 | 18 (47.4%) |

Table 13b: Frequency and percentage of overall textual plagiarism at FKM according to type

| <i>PSM</i> | Overall number of paragraphs analysed (percentage, %) | Overall number of paragraphs plagiarized (percentage, %) | Overall number of paragraphs plagiarised according to type (percentage, %) | | | | | | | Total |
|------------|---|--|--|----------|--------|--------|--------|----------|--------|------------|
| | | | A | B | C | D | E | F | G | |
| n=10 | 364 (100%) | 107 (29%) | 51 (48%) | 27 (25%) | 1 (1%) | 5 (5%) | 0 (0%) | 23 (21%) | 0 (0%) | 107 (100%) |

As shown in Table 13a and Table 13b, the percentage of textual plagiarism for each of the *PSM* analysed had changed. 364 paragraphs were analysed and it was found that 29% or 107 of these paragraphs had been plagiarised. The percentage of textual plagiarism (seven types altogether) was within the range of as low as 5.4% to as high as 79.4%, with an average of 30.7% or between 10 and 11 paragraphs being textually plagiarised in every literature review section of students' *PSM*. The most frequent cases of textual plagiarism were type A (48% or 51 paragraphs), which was the most serious of all seven types, followed by type B (25% or 27 paragraphs) and type F (21% or 23 paragraphs). Minor cases which had been detected were type D (5% or 5 paragraphs) and type C (1 % or 1 paragraph). There were no cases detected for type E and type G.

For non-textual plagiarism, a total of 109 graphics were analysed and it was discovered that 11.9% or 13 of them had been plagiarised. Out of this 11.9% non-textual plagiarism, type I was more frequent compared to type H, accounting to

almost 70% of overall non-textual plagiarism (see Table 14a and Table 14b)

Table14a: Frequency and percentage of non-textual plagiarism at FKM according to type

| No | PSM ID Code | Total number of graphics analysed | Total number of graphics plagiarised according to type (percentage, %) | | Graphics plagiarised (percentage, %) per PSM |
|----|-------------|-----------------------------------|--|-----------|--|
| | | | H | I | |
| 1 | 03002 | 15 | 0 | 0 | 0 |
| 2 | 03012 | 16 | 0 | 2 (12.5%) | 2 (12.5%) |
| 3 | 03013 | 8 | 0 | 0 | 0 |
| 4 | 03014 | 8 | 0 | 0 | 0 |
| 5 | 03019 | 14 | 0 | 0 | 0 |
| 6 | 03021 | 3 | 0 | 0 | 0 |
| 7 | 03026 | 11 | 1 (9.1%) | 0 | 1 (9.1%) |
| 8 | 03028 | 12 | 0 | 0 | 0 |
| 9 | 03031 | 13 | 3 (23.1%) | 7 (53.8%) | 10 (76.9%) |
| 10 | 03032 | 9 | 0 | 0 | 0 |

Table 14b: Frequency and percentage of overall non-textual plagiarism at FKM according to type

| PSM | Overall number of graphics analysed (percentage, %) | Overall number of graphics plagiarized (percentage, %) | Overall number of graphics plagiarised according to type (percentage, %) | | |
|------|---|--|--|-----------|-----------|
| | | | H | I | Total |
| n=10 | 109 (100%) | 13 (11.9%) | 4 (30.8%) | 9 (69.2%) | 13 (100%) |

4.4 Discussions

According to Fraenkel and Wallen (2003), it is important to look at demographic factors and other characteristics of respondents in order to minimise biasness. As such in this study, researchers took into consideration students' exposure to academic writing skills in the course of their studies in order to reduce elements of biasness.

4.4.1 Students' awareness, understanding and views

Results from data analysis of student survey clearly showed that majority of the students were aware of plagiarism and their definition of plagiarism was mostly 'using other people's words or ideas without properly citing the sources or acknowledging them'. This was not only limited to 'using' but also the understanding of what plagiarism was had been extended to 'sharing words or ideas' if no due credit or acknowledgement was made. The results in the present study reflected Park's (2003b) findings, who stated that 'the term plagiarism is usually used to refer to the theft of words or ideas, beyond what would normally be regarded as general knowledge' (p. 472). Students' sources of information could be of someone's written works or public sources as mentioned in the Academic Integrity Survey conducted by Kraus (2002) cited in Sandra and Andrew (2005) that '72% of students admitted to having plagiarized written work by copying from a friend or public source' (p. 1).

Although respondents in the student survey were aware of what plagiarism and understood what plagiarism generally meant, only half of the total number of respondents viewed plagiarism as legally wrong. This suggested that some of these students were not aware that plagiarism was legally wrong and could have legal implications. However, for those who perceived plagiarism as legally wrong, this perception was due to the impression that plagiarism was an academic misconduct related to dishonesty rather than an action that could be legally penalised by authorities concerned. For this, Loui (2002) offered the following explanation:

Some disciplines require quotation marks or indentation, some do not. Thus, in investigating an allegation of plagiarism, a hearing panel should always include members who understand the norms of the academic discipline in which the allegation occurred.
(p. 531)

It could be that different disciplines or fields of specialisations require different style of writing conventions. Therefore, what could be termed as legally wrong in one particular academic writing convention, may be acceptable in another. However, in all cases, acknowledgement of sources or citations, was never in question. It was just a matter of *how* to cite the sources. This lack of *know-how* was in fact the third most frequent responses to why students plagiarised their work, apart from wanting to take the *short-cut* to *getting good grades*. Nevertheless, according to Philip (2002), who carried out a study on students after they were taught bibliographic citation techniques by librarians and professors in Cornell University, there was no significant changes where both sources of guidance 'have little (if any) effect on improving the scholarly component of research papers' (pp. 6-7).

In evaluating all 10 scenarios, it was found that UMP students were also not aware and did not clearly understand that they could be committing a kind of academic dishonesty known as 'collusion' (Dobrovska & Pokorny, 2007) if they 'cooperate with a friend on an assignment meant to be completed individually'.

4.4.2 Lecturers' awareness, understanding and views

By taking plagiarism 'lightly', lecturers were unaware this form of academic misconduct might have been committed. A study conducted by Malcolm, Noorlaila Ghazali & Siti Fatimah Noor Minhad (2007), found that the attitudes of lecturers on the lack awareness of the risk of committing plagiarism, the sixth hypothesis that proposed in their study, contributed to plagiarism (p. 132). The study also reported that although there were acts of plagiarism in the institution where they taught, the lecturers themselves felt reluctant to take action against students who committed plagiarism led this misconduct being unattended. Consequently, plagiarism in the 'single campus of one Malaysian university' (p. 128) in the study, has no significant affect to students since they were not afraid of being caught by the lecturers. In this regard, Debra (1998), advised lecturers that they need to be aware of copyright law (especially) in transferring print based materials to electronic media. She commented that '...Academic staff, for their part, must be aware of the plethora of resources on the Internet [specifically] if they were to prove plagiarism occurred from this means' (p. 337).

4.4.3 Literature review section of students' *PSM*

Generally, results from the analysis of PFS and especially from PAF clearly indicated a high level of plagiarism practice in the students' literature review section of their *PSM*.

PSM analysis using PFS showed that nine out of the ten students have a small percentage of congruent words in their works which could be found in the Internet. Continuing from this analysis, in order to provide a clearer and detailed view of

students' plagiarism practice in their PSM, the researchers put forward the level of plagiarism practices into the following four categories:

- (1) Serious plagiarism
- (2) Moderate plagiarism
- (3) Slight plagiarism
- (4) Bad practice/ Pseudo-plagiarism

The discussion on these categories will be done based on the types of plagiarism as defined in PAF.

Based on the definitions provided by Hexham (1992) and School of Humanities, University of Birmingham (2007), the nine types of plagiarism listed in PAF (Table 3) can be further categorised into the following three levels:

Table 15: PAF's Types of Plagiarism according to Category of Level of Plagiarism

| Category | Type | Style |
|---------------------|------|---|
| Serious Plagiarism | A | Paragraph Total Lifting |
| | D | Paragraph Total Lifting with a Few Words Changed or Deleted |
| | H | Informative Graphics |
| Moderate Plagiarism | F | Paragraph Partly Lifting with Phrases and/or Clauses Deleted, Added and/or Reworded |
| | G | Paragraph Partly Lifting with Clauses or Sentences Combined or Divided |
| Pseudo-Plagiarism | B | Paragraph Total Lifting with Citation |
| | C | Paragraph Total Lifting with Wrong Reference |
| | E | Paragraph Idea Lifting |
| | I | Picture |

As depicted in Table 15, all nine types of plagiarism listed in PAF can be further categorised into three levels. The researchers deduced that plagiarised text containing 25% or less lifting from the original materials should be considered as 'slight plagiarism'. Therefore slight plagiarism was not included in this category since the framework for PAF was based on at least 50% of total lifting from Internet-based materials.

With reference to PAF, type A, D and H were considered as 'serious plagiarism' since either total lifting or lifting with very minor changes to the original paragraph or information was made. This type of plagiarism is similar to Lakomy and Price's 'plagiarism outright' (2004). Table 13a illustrates that although the percentage of practice differs, eight students have examples of serious textual plagiarism in their works, and two students have both types (A and D) in their works. Only two students showed examples of serious graphical plagiarism (Type H) in their work; nevertheless, student 03031 clearly illustrated serious plagiarism in both textual and graphical forms. Although a plagiarist's intention can never be clearly seen; yet, type H is an example of opportunistic plagiarism in which a plagiarist uses available information (in this case, graphical information) due to laziness (Beasley, 2003). Examples of serious plagiarism in the students' *PSM* are shown in Table 16.

With the exception of School of Humanities, University of Birmingham (2007), no literature has quantified plagiarism in categorising it. Since PAF framework was quantitatively designed, the researchers believe that type F and G can be regarded as moderate plagiarism because students' works


contained at least 50% of lifting with no citation and referencing. As Table 13a indicates, there is no example of type G plagiarism, but the obvious examples of moderate plagiarisms identified in students' *PSM* are type F. With percentages ranges from 3% to 27%, eight of the students indicate moderate plagiarism in their works. Examples of moderate plagiarism in the students' *PSM* are shown in Table 16.

The third category is pseudo-plagiarism. Bouville (2008) and Hexham (1992) state that this happens when in-text citation and referencing are not properly done by the writer. On the hand, Lakomy and Price (2004) define this type of plagiarism as minor plagiarism. Type B, C and E can be regarded as pseudo-plagiarism since either the original sentences were not paraphrased but in-text citations and references were provided or vice versa. This is a bad practice of incorporating other people's works into one's own work. Students should be enlightened that by just providing in-text citation or reference does not constitute the right to claim that work as one's own work. There is no example of type E found in the students' *PSM*; however, the most examples of pseudo-plagiarism in students' *PSM* section of the literature review is the paragraph total lifting with citation (Type B). Examples of pseudo-plagiarism in the students' *PSM* are shown in Table 16.

Table 16: Examples of Plagiarism According to Category

| Category | Students' Work | Original Material and URL Address | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--|---|------------------------|----------------------|--------------------------|--------|----------|---|-------|----------------------|--------|----------|----------------|---|----------|-------------|-----------------------|---------------|--------------------------|---|----------|---------------|------------------------|----------------------|--------------------------|---|----------|----------------|-----|---------------|----------------------|--|
| Serious Plagiarism: Textual | <p>The Air Force's MQ-1 Predator is an Unmanned Aerial Vehicles with many "firsts" to its name. It is the first Department of Defense advanced concept technology demonstration (ACTD) Unmanned Aerial Vehicles to transition to active military duty.</p> | <p>More than 75% is taken word per word from the original material. Unmanned Aerial Vehicles: Background and Issues for Congress by Elizabeth Bone and Christopher Bolkom, available at http://www.fas.org/irp/crs/RL31872.pdf</p> <p>This reference is not in the student's reference.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serious Plagiarism: Non-Textual | <p>Table 2.2 : Candidate UAV systems to incorporate more survivability.</p> <table border="1"> <thead> <tr> <th>Priority</th> <th>UAV Category</th> <th>System</th> <th>Mission</th> <th>Threat</th> <th>Maturity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Large</td> <td>Predator B Air Force</td> <td>Hunter</td> <td>Tactical</td> <td>In Development</td> </tr> <tr> <td>2</td> <td>Tactical</td> <td>Predator AF</td> <td>ISR and Hunter Killer</td> <td>ADA, Tactical</td> <td>In Production & Deployed</td> </tr> <tr> <td>2</td> <td>Tactical</td> <td>Hunter (Army)</td> <td>ISR with Hunter Killer</td> <td>Small, ADA, Tactical</td> <td>In Production & Deployed</td> </tr> <tr> <td>3</td> <td>Tactical</td> <td>Pioneer (UMSC)</td> <td>ISR</td> <td>ADA, Tactical</td> <td>Small, ADA, Tactical</td> </tr> </tbody> </table> | Priority | UAV Category | System | Mission | Threat | Maturity | 1 | Large | Predator B Air Force | Hunter | Tactical | In Development | 2 | Tactical | Predator AF | ISR and Hunter Killer | ADA, Tactical | In Production & Deployed | 2 | Tactical | Hunter (Army) | ISR with Hunter Killer | Small, ADA, Tactical | In Production & Deployed | 3 | Tactical | Pioneer (UMSC) | ISR | ADA, Tactical | Small, ADA, Tactical | <p>The original table contains more information, the student chose only four.</p> <p>Taken from http://www.bahdayton.com/surviac/asnews/AS%20Newsletter%20Fall%202005.pdf This reference is not in the student's reference.</p> |
| Priority | UAV Category | System | Mission | Threat | Maturity | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Large | Predator B Air Force | Hunter | Tactical | In Development | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Tactical | Predator AF | ISR and Hunter Killer | ADA, Tactical | In Production & Deployed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Tactical | Hunter (Army) | ISR with Hunter Killer | Small, ADA, Tactical | In Production & Deployed | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Tactical | Pioneer (UMSC) | ISR | ADA, Tactical | Small, ADA, Tactical | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 16: Examples of Plagiarism According to Category (continued)

| | | |
|---------------------------------------|---|--|
| <p>Moderate Plagiarism</p> | <p>When we drive a car in the cold weather, we expect the heater to keep us warm inside, and when we drive in the hot weather, we expect the air conditioning system to keep us cool. Air conditioning makes driving much more comfortable in hot weather. While car air conditioner cleans and dehumidifies (removes excess moisture), the outside air entering inside the car.</p> <p>03002</p> | <p>We expect the heater to keep us warm when it's cold outside, and the air conditioning system to keep us cool when it's hot. Air conditioning makes driving much more comfortable in hot weather. Your car's air conditioner cleans and dehumidifies (removes excess moisture), the outside air entering your car. Taken from http://www.musclegarclub.com/library/tech/air-conditioning.shtml This was not listed in the student's references.</p> |
| <p>Pseudo-Plagiarism: Textual</p> | <p>An experimental study of R.J.Dykes[2] roll forming process was undertaken using a modified horizontal beam raft-type roll forming machine. The machine had five individual forming station at 275mm spacing and was powered by a 4.4 Kw induction motor fitted with an infinitely variable speed controller.</p> <p>03032</p> | <p>The whole paragraph was lifted with the inclusion of the author's name. The original academic article can be found at <i>Composites Part A: Applied Science and Manufacturing</i> available at http://www.sciencedirect.com/science The reference was included in the student's references, but incorrectly in-text citation technique was used.</p> |
| <p>Pseudo-Plagiarism: Non-Textual</p> |  <p>Figure 2.4 The Vecta Kart (a)</p> <p>03053</p> | <p>The picture was taken from the website in which most of the information was plagiarised. Taken from http://www.vecta.com/kart_products.aspx?f=15884 This was not listed in the student's references.</p> |

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5. Introduction

This chapter presents the summary of findings and the answers to the underlying research questions. Based on the conclusions in the study, researchers ultimately recommend practical suggestions which could be implemented with immediate effect and provide useful information for implications for further research, taking into consideration the limitations of the completed research.

5.1 Conclusions

In the early stage of this study, researchers had embarked on this project with the aim to find out whether students and lecturers at UMP were aware of plagiarism and understood what plagiarism was. Next, researchers went on to examine factors that might have triggered plagiarism from the views of students and lecturers. Subsequently, researchers had used both free electronic digital tool and manual mode of analysis to investigate whether or not selected sample of literature review section of students' *PSM* had been plagiarised from Internet-based materials. Since plagiarism was clearly evident, the extent and nature of such offence were determined in order to reduce it by proposing ways to detect and means to prevent this form of academic dishonesty.

5.1.1 Awareness on plagiarism

Based on both student and online academic staff surveys, it can be concluded that students and lecturers were well aware of plagiarism in academic works. However, this awareness had mostly been from moral or ethical viewpoint as half of the respondents did not seem to think it was wrong from legal point

of view. This could be due to lack or no serious implementation of legal actions against student plagiarists.

5.1.2 Understanding of the nature of plagiarism

While serious plagiarism was clearly understood by many as plagiarism outright beyond any reasonable doubt, it was discovered that this understanding was not thoroughly comprehensive in moderate and slight plagiarism. This could be due to lack of awareness and understanding of proper citation techniques or confusion arising from the existence of different academic writing conventions adopted in different disciplines.

5.1.3 Views on factors that triggered plagiarism

As reviewed in most literature on plagiarism among students, factors that triggered plagiarism in this study point towards poor time management, lack of personal development and other necessary skills to compete among peers and in coping with the demands of academic writing in particular and tertiary education in general. This lack of both hard and soft skills could be due to insufficient knowledge on subject matter, inadequate exposure to the genre of academic writing and lack of research management skills. However, attitude problems were still visible as some might rather choose to 'follow the flow' albeit small in numbers, and continued to be 'ignorant', which could also be due to unclear guidelines on plagiarism.

5.1.4 Evidence of plagiarism in UMP students' PSM

In view of plagiarism in selected sample of the literature review section of students' PSM, it was found that:

(a) Extent of plagiarism in UMP students' PSM

The use of electronic analysis using free PFS was not able to accurately detect plagiarism. Although it managed to show that students did plagiarise their texts, the percentage was below 5%. However, when manual analysis was carried out using PAF, evidence suggested that plagiarism detected ranged from 5.4% to as high as 79.4%, with the average being 30.7%, well over 25%. Three out of ten cases contained nearly 50% plagiarised paragraphs and one was nearly 80%. This suggests that the extent of plagiarism in each of the selected sample of the literature review sections of UMP students' PSM reports could be categorised as:

- (i) slight, in 6 PSM reports, with percentage of plagiarism ranging from 6.6% to 21.9%,
- (ii) moderate, in 3 PSM reports, with percentage of plagiarism ranging from 42.9% to 47.4%, and
- (iii) serious or plagiarism outright, in 1 PSM report, with 79.4% of the whole literature review section plagiarised.

Plagiarism in the literature review UMP students' PSM did not only exist in textual but also non-textual form. It was discovered that out of ten PSM reports, 3 were found to contain plagiarised graphics, ranging from 9.1% to 76.9%. Based on the total number of 109 graphics analysed, 13 (23.1%) were found to have been plagiarised.

It can be concluded that there was enough evidence to show that overall plagiarism (textual and non-textual combined) in selected sample of UMP students' *PSM* could be categorised as moderate to serious.

(b) Nature of plagiarism in UMP students' *PSM*

The most common types of textual plagiarism were:

- i) Type A – Paragraph lifting, considered as serious plagiarism: 51 paragraphs (48%),
- ii) Type B – Paragraph total lifting with citation, considered as pseudo-plagiarism or bad practice: 27 paragraphs (25%), and
- iii) Type F – Paragraph lifted with phrases and/ or clauses deleted, added and/ or reworded, considered as moderate plagiarism: 23 paragraphs (21%).

For non-textual form of plagiarism in three cases identified, out of 13 plagiarised graphics, type I or pictures was found to be more common, 69.2% (9) than type H or informative graphics, 30.8% (4).

It can be concluded that plagiarism was evident mostly in the form of paragraph lifting, without any acknowledgement of sources at all or with improper citation techniques. Similarly, direct copying and pasting of pictures or photographs from the Internet was more common than tables and figures or diagrams, which had to be based on certain data from a particular research or study.

In short, it is clear that plagiarism was evident in UMP students' *PSM* reports and based on the total number of paragraphs analysed, serious plagiarism was the most common, although individual analysis showed that only one student had committed serious plagiarism throughout the entire literature review section. This could be due to the large number of paragraphs coming from one *PSM* report which had been classified as having committed 'serious plagiarism', while the rest of the seriously plagiarised paragraphs came from other *PSM* reports.

5.1.5 Reducing plagiarism in UMP students' *PSM*

As mentioned previously, although only one student had committed serious plagiarism, it does not mean that the other students did not have seriously plagiarised paragraphs in their literature review section of the *PSM* reports. Because serious plagiarism by individual (offender) classification was determined based on the quantity or in this case, number of (words, phrases or sentences in) paragraphs per *PSM* report, the extent and nature of the other students's entire literature review sections were not plagiarism outright, but mostly moderate. Nevertheless, efforts should be made to reduce plagiarism in UMP students' *PSM* reports. Therefore, researchers in this study have identified the following measures to be adopted:

- (a) Detecting and handling plagiarism
 - Use combination of plagiarism detection strategies - manual and electronic,
 - Introduce formal procedures in submission of assignments by using official forms and keep proper record of all documentations,

- Monitor students' progress in assignments by having face-to-face communication like interview or progress report,
- Ensure list of references or works cited are provided,
- Introduce rules and regulations on plagiarism and other forms of academic misconduct,
- Set up a working committee at department or centre/ faculty to handle plagiarism and other forms of academic misconduct,
- Report cases of plagiarism and other forms of academic misconduct to the Senate of the University, who will ultimately decide on the penalty to be imposed on the offenders.

(b) Avoiding plagiarism

Lecturers can:

- Instil awareness on moral/ ethical and legal implications through soft skills,
- Develop students' understanding through ML courses from level 1 until level 4 and CMLHS elective courses,
- Revise course materials and mode of assessment for example, introduce individual portfolio, break up assignment into series of individual tasks, vary nature of tasks assigned, develop Files Bank for Writing Assignments.

Students should:

- Develop a sense of ownership with materials produced,

- Attend study skills, time management and personal development courses,
- Adopt effective reading and writing strategies for research in advanced/ level 4 academic writing courses.

In all cases and at all times, however, students must be given a fair chance to defend themselves before any decision is made, and it should be done in the presence of their academic advisors.

5.2 Recommendations

In view of the findings summarised and conclusions drawn from this study, researchers in this study would like to propose the following recommendations:

5.2.1 Further development of Plagiarism Analysis Framework (PAF) for use in manual analysis

The PAF developed by the researcher consists of some of the common types of plagiarism detected in the students' work. It can, therefore, be used by the faculty lecturers at the university. Although a manual framework, it is useful when digital tool for plagiarism detection is unavailable. This framework should also be extended and expanded to accommodate the changing nature of materials from the internet especially non-textual, which could include audio and video files.

5.2.2 Procurement of Digital Plagiarism Detection Tool

Since plagiarism is an important issue in the academic world, purchasing a systematic and reliable system for plagiarism detection by the university is essential. So far, at Universiti Malaysia Pahang, such tool is unavailable, and therefore,

making the plagiarism detection processes a difficult and disorganised process. *Turnitin* is a systematic and reliable digital plagiarism detection tool which is used by most universities internationally. It is high time that such a tool is purchased so that it can be used by all academic staff at UMP.

5.2.3 Implementation of Plagiarism Rules and Regulations at UMP

The study found that there is no serious and standard implementation of plagiarism rules and regulations at UMP. Each student and academic staff has different interpretations of what plagiarism is and there is no handbook that clearly explains and describes plagiarism, how to handle plagiarism cases and penalties imposed on this form of academic dishonesty and other forms of academic misconduct. Since the vision and mission of the university is to be a world class technical university, plagiarism should be regarded as a serious matter. Therefore, researchers in the study call for the following actions to be taken:

- i. conduct follow-up thorough study on plagiarism across all faculties at UMP,
- ii. develop guidelines and procedures on plagiarism based on the findings in this study and follow-up research,
- iii. publish handbook on plagiarism for academic staff and students based on guidelines and procedures developed,
- iv. disseminate information by distributing handbook on plagiarism for all academic staff and students,
- v. organise and/ or conduct training programmes on detection and handling of plagiarism cases for academic staff and awareness programmes on avoiding plagiarism among students,

- vi. stress on penalties imposed on plagiarism in course outline and highlight this in soft skills evaluation in IMS under 'Learning Capability' element,
- vii. implement standard rules and regulations on plagiarism across all faculties and academic centres at the University,
- viii. set up a steering committee at University level and working committee at faculty/ centre level to handle plagiarism cases, and
- ix. determine penalties to be imposed on each type of plagiarism.

5.2.4 Constant review of current course content and evaluation and development of new courses

Since all bachelor students will need to take *PSM I* and *PSM II*, the faculty, then, needs to encourage these students or include it in the system of subject registration for them to take advanced courses offered by CMLHS offered courses such as academic writing courses for proposal writing (UHL4042) and expository writing (UHL4032) prior to taking the *PSM*. At the same time, such courses need to be evaluated and reviewed to ensure that they meet the needs of learners and demands of academic writing in different fields or areas of specialisations in engineering and technology. Constant review of course content and evaluation will also ensure that instructors have the opportunities to redesign and modify methods of delivery, mode of assessment and nature of assignments. Needs analysis on the development of new courses like English for Research Purposes or English for Research Publication Purposes should also be carried out to determine whether such courses should be offered at undergraduate and postgraduate levels.

5.2.5 Appointment of CMLHS lecturers as co-supervisors

In this study, researchers have come across enough evidence of varying degrees and types of plagiarism. The Department of Modern Languages at CMLHS have also introduced at least two academic writing courses at advanced level, *UHL4042: Project-based Proposal Writing* and *UHL4032: Expository Writing*. Researchers are keen to recommend that CMLHS lecturers who are teaching relevant advanced level academic writing courses be appointed as co-supervisors. This is to ensure that while faculty lecturers should be more concerned with the content (research methods and findings), as co-supervisors, CMLHS lecturers could focus on the language. CMLHS lecturers could also benefit in terms of interdisciplinary research experience and

5.3 Limitations of the study

In order for the recommendations above to be implemented, researchers would also like to highlight the following limitations encountered during the course of this study:

5.3.1 Non-standardised practices by faculties at UMP

The scope of study was initially proposed to cover five faculties at UMP which were stated in chapter 3 of this report. The *PSMs* were also initially proposed to be collected from five faculties, and in which the plagiarism analysis would have been done on *PSMs* from all five faculties. However, this was later changed and only the *PSMs* from FKM were finally included in the study due to non-standardised practices of all five faculties on the following matters:

1. All five faculties did not share the same rules and regulations, marking schemes, and implementation of *PSM*.
2. All five faculties also did not have the same system of storage for *PSM* final reports of the previous students. One faculty required both the hardcopy and softcopy versions. A few faculties do keep the softcopy version, but the documents were either stored as wordprocessor documents or as PDF documents. On the other hand, another faculty makes it available as only hardcopy versions which need to be obtained from the library.
3. All faculties also did not have the same policy in allowing researchers from other centres, units or faculties other than the researchers or staff of the faculty itself to obtain *PSM* reports for research purposes. For some faculties, the researchers had to wait for a period of time just to obtain the permission from the coordinator in order to gain access to *PSM* reports.

The differing systems and non-standardised practices by all the faculties resulted in the difficulties faced by the researcher in collecting *PSM* final report. Conversion of different versions of *PSMs* into scannable reports to be used for analysis also did not yield satisfactory output, and hence, time and energy were mostly spent in vain.

The researchers, therefore, would like to highlight this as the most significant limitation faced during the study in which results of the study could not be generalised to the whole population of UMP students.

5.3.2 No database or corpus of *PSM* engineering reports at UMP

Currently, there is no database or corpus of Malaysian academic written texts in different fields of engineering that stores UMP engineering undergraduates' *PSM* reports in electronic mode from all faculties which can be retrieved for analysis. Furthermore, not all faculties require their students to submit *PSM* reports in both hard and soft copies. In addition, even if certain faculties require students to submit in soft copy, these *PSM* reports are normally saved in *PDF* format instead of *Microsoft Word*. Researchers therefore had to retype the whole of literature review section for all *PSM* reports since converting from *PDF* to *Microsoft Word* did not yield high quality output. The UMP Library also do not have in their possession students' *PSM* reports in softcopy mode. Instead, they only keep the hard copy of students' *PSM* reports.

5.3.3 Unreliable Plagiarism Detection Tool

Due to limited funding and time constraint to review other plagiarism detection tools since money is needed to purchase plagiarism detection software and time is needed to learn how to use and be familiar with such detection engine, researchers had no option but to use PFS. Although PFS did manage to detect plagiarism in students' *PSM* reports, the detection did not provide enough details other than suggesting probable links to certain sites in the Internet. Apart from spending some time to retype the literature review section of the *PSM* reports, researchers had to spend more time to develop a framework, later named as PAF, to carry out manual analysis of students' *PSM* reports. Overall, the whole data collection and data analysis stages in this research were too time-consuming.

5.3.4 Limited funding

There is limited funding by the University for research studies such as the ones investigating on the development of academic writing courses, learning materials and corpus of engineering texts based on *PSM* reports. Although they might not seem as significantly important as engineering-based research projects for a technical university like UMP, research projects like these would prove benefits in a long run for engineering undergraduates and for the University's vision and mission in becoming world-class competence-based technical university and producing global graduate engineers who are both academically and professionally competent. This research lacks the necessary funding it required and this prevented the researchers from procuring more reliable plagiarism analysis software that would have yielded better results. Hence, a more reasonable and sufficient amount of funding should be provided in future to researchers who proposed similar or follow-up studies in these areas.



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APPENDIX A: Plagiarism Questionnaire for students (PlaQ-s)

CENTRE FOR MODERN LANGUAGES
& HUMAN SCIENCES (CMLHS)

QUESTIONNAIRE

Designing Standard Plagiarism Guidelines on Internet-based Materials

Dear students

This questionnaire aims to investigate UMP students' knowledge and understanding of plagiarism, as well as to identify the possible causes to the act of plagiarism. As a result, a guideline for lecturers to assist them in guiding their students to avoid plagiarism will be proposed.

There is no right or wrong answers and therefore no marks will be given. You are expected to answer all questions sincerely and truthfully as it will reflect on the findings of this study. Your information is regarded confidential and will only be used for the purpose of this study only.

Thank you for your cooperation.

ZURAINA ALI (Project Leader)
HAFIZOAH KASSIM
ZARINA MOHD ALI
NOOR RAHA MOHD RADZUAN
NOR YAZI KHAMIS

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SECTION A

Faculty: FKKSA FSKKP FKASA FKEE FKM

Gender: MALE FEMALE

SECTION B

Instruction: Choose the most appropriate responses.

1 Do you know what plagiarism is?

Yes No Not sure

2 In your opinion, what is plagiarism? (You may tick as many answers as you think appropriate)

- a Using someone else's words as if they were your own
- b Getting your ideas from a text book
- c Using someone else's results as if they were your own
- d Sharing work with someone else and pooling ideas
- e Using someone else's ideas as if they were your own

3 Do you think plagiarism is legally wrong?

Yes No Not sure

If 'yes', why? (You may tick as many answers as you think appropriate)

- a You may be penalized.
- b It is dishonest.
- c Assignments that are plagiarised fail to demonstrate your knowledge of the work.
- d You don't learn anything by copying someone else's work.
- e It steals other people's ideas.

4 In your opinion, why do you think students plagiarize? (You may tick as many answers as you think appropriate)

- a To get good grades.
- b A quick way to finish assignment.

- c Lack of knowledge in citing sources
- d No knowledge on plagiarism.
- e Practiced by fellow students

| |
|--|
| |
| |
| |

SECTION C

Scale:

- 1 - Unacceptable
- 2 - Not Sure
- 3 - Acceptable

Instruction:

Based on the scale above, rate the following scenarios.

| NO. | SCENARIO | SCALE | | |
|-----|---|-------|---|---|
| | | 1 | 2 | 3 |
| 1 | Take an idea from the internet but expand it using your own words. | | | |
| 2 | Cooperate with a friend on an assignment meant to be completed individually. | | | |
| 3 | Show assignment to a lecturer for guidance. | | | |
| 4 | Synthesize two internet articles into one paragraph. | | | |
| 5 | Copy material for an essay from a text book. | | | |
| 6 | Submit a friend's assignment as your own assignment (with permission). | | | |
| 7 | Hire a person to write your assignment for you. | | | |
| 8 | Copy another student's assignment without their knowledge. | | | |
| 9 | Take a student's assignment from a lecturer's pigeon hole and copying it. | | | |
| 10 | Copy illustrations from the internet but change the terminology. | | | |
| 11 | Resubmit an assignment from a previous subject in a new subject. | | | |
| 12 | Ask someone's help to do proper citation for your work. | | | |
| 13 | Copy material for an essay from the Internet. | | | |
| 14 | Submit an assignment using a different format of citation as required by lecturers. | | | |

Thank you for your cooperation.

APPENDIX B: Plagiarism Questionnaire for lecturers (PlaQ-1)

Section A

INSTRUCTION: CHOOSE THE MOST APPROPRIATE RESPONSES.

1 Do you know what plagiarism is?
Yes No Not sure

2 Plagiarism is ... (you may choose more than one response)

- a Copying of sentences, paragraphs or creative products which are the work of other persons (including books, articles, theses, unpublished works, working papers, seminars and conference papers, internal reports, lecture notes or tapes) without due acknowledgement.
- b Too closely paraphrasing sentences, paragraphs or themes.
- c Using another person's work(s) (including words, music, computer source code, creative or visual artifacts, designs or ideas) or research data without due acknowledgement.
- d Submitting work which has been produced by someone else (e.g. allowing or contracting another person to do the work for which you claim authorship).
- e Copying or submitting computer files, code or website content in whole or in part without indicating their origin.
- f Submitting previously assessed or published work for assessment or publication elsewhere, without permission or acknowledgement (self-plagiarism).
- g In the case of group projects, falsely representing the individual contributions of collaborating partners.

3 Do you think plagiarism is morally wrong?
Yes No Not sure

4 If your answer to Question 3 is 'yes', why? (you may choose more than one response)

- a It means cheating; which violates honesty, fairness and responsibility and leads to reduced trust and respect.
- b It deprives learning opportunities.
- c It indicates lack of academic integrity; could not resist the temptation to cheat and help to create an atmosphere where cheating is an acceptable act.
- d It helps to devalue your own work / degree.
- e Once started, it is a cycle that can be hard to break and leads to lowered self-esteem.

5 What if a person did not mean to plagiarise? Would it still be considered as plagiarism?

Yes No Not sure

Why?

.....
.....

6 Are you aware of any acts or policies on plagiarism in Malaysia?
Yes No Not sure

- 7 What could happen if a person in UMP is accused of plagiarism?
- a Will be given the opportunity to explain actions and possibly advised to undertake a short course on academic writing
 - b Will only be given a warning or advice
 - c Could be imposed on penalty if found guilty
 - d Only rewrite / redo the course work that is found to be plagiarized
 - e No action will be taken

Section B

INSTRUCTION: PLEASE CHOOSE AND/OR RECOMMEND YOUR PENALTIES FOR EACH LEVEL OF PLAGIARISM. YOU MAY CHOOSE MORE THAN ONE

LEVEL I

It is due to a person's inexperienced or lack of knowledge of conventions or ways for referencing, such as poor use of paraphrasing. This is not usually considered to be academic misconduct, but is still considered unacceptable. It might be excused at the beginning of a course but it will be viewed seriously in later semesters.

- a Send for a short course on academic writing
- b Provide a chance to redo or resubmit new work
- c Receive an advice
- d Receive a warning
- e Get a fail grade for the course work
- f No action taken
- g Other(s):
(Please state)

LEVEL II

It is more serious than the first level where the work demonstrates

- A few copied paragraphs of work, very poor attempts at paraphrasing or misuse of a small amount of computer source code etc., without reasonable attempts to acknowledge the source, even though much of the original work is included, or
- A few tries of short cuts by cheating, such as by cutting and pasting small sections of work from others authors and not acknowledging their work, or copying small sections of work from other students.

- a Redo the assessment (but with reduced maximum mark)
- b Nil mark for the part of the assessment that is affected
- c Nil mark for the assessment
- d Fail the course
- e Suspension of the rights and privileges of enrolment for a period of time
- f No action taken
- g Other(s):
(Please state)

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LEVEL III

This is a very serious level and will be dealt at the University level. More than 10 per cent of the work is found to be copied, taken from a website, derived from other person's assignment or submitted work presented by other person.

- a Nil mark for the assessment / all assessments in the course
- b Annulled grade for the course
- c Suspension of the rights and privileges of enrolment for a period of time
- d Exclusion from the University for a period of up to one year
- e Refusal to enrol
- f Expulsion from the university
- g Other(s):
(Please state)

Thank you for your cooperation.

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