



Attitudes towards plagiarism among undergraduate accounting students: Malaysian evidence

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Abstract

Purpose – The purpose of this study is to examine undergraduate accounting students' perceptions of factors contributing to plagiarism activities.

Design/methodology/approach – Survey methods were used to investigate the prominence of different factors, and any differences associated with student characteristics.

Findings – The results suggested that factors contributing to plagiarism include lack of awareness, lack of understanding, lack of competence, and personal attitudes. No evidence was found to support the suggestion that either pressure or the availability of internet facilities had increased the incidence of plagiarism. The study provided evidence that a significant proportion of Malaysian undergraduate accounting students in the study had engaged in plagiarism activities to a limited degree; the observed profile was consistent with the incidence of plagiarism activities being associated with academically weaker, male students with a negative attitude to their studies.

Originality/value – The findings have significant implications for educators if they are to improve the detection and punishment of plagiarism activity, and educate potential perpetrators.

Keywords Undergraduates, Accounting education, Malaysia

Paper type Research paper

1. Introduction

Plagiarism is the intentional use of the ideas and words of others without the clear acknowledgement of the source of that information. Beyond that:

... plagiarism, a form of intellectual dishonesty, involves unintentionally using someone else's work without properly acknowledging where the ideas came from (the most common form of plagiarism) or intentionally copying someone else's work and passing it off as your own (the most serious form of plagiarism) (Palmquist, 2003, pp. 173-4).

Evidence of dishonesty among accounting undergraduates is particularly disturbing, since future members of the accounting profession are involved. The profession rightly perceives the honesty and integrity of its members as important characteristics if it is to retain the trust of the public in its accounting, compliance and auditing activities. Ethical behaviour has been a fundamental feature of the programmes of accounting bodies over a number of years (CIMA Ethical Guidelines, 1992) and especially so in the wake of high-profile corporate failures like those of Enron and Worldcom.

Failure to cite factual information properly has been of serious concern for educators since the turn of the century; academic dishonesty among students is nothing new (Davis *et al.*, 1992; Karlin *et al.*, 1988) but the advent of the internet has vastly increased the number of sources available to students, while at the same time decreasing the likelihood of educators being able to identify precisely a



plagiarised source. Sterngold (2004) notes that the digital revolution in information technology has made available a much wider number of sources, facilitating the purchase or “cut-and-paste” of appropriate materials; at the same time it has increased the burden of detection. It is easy for a student to paraphrase another author’s ideas without appropriately crediting the source, in the pursuit of higher grades, and such activity is frequently attributable to desperation, often caused by procrastination or plain laziness. The growth of the internet is, however, causing a revolution, because of the widespread availability of full-text databases and world wide web pages, so much so that plagiarism “is becoming rampant in schools, colleges and universities” (*New Straits Times-Management Times*, 2003). Ashworth *et al.* (2003) and Rust (2002), among others, also note that the development of alternative forms of assessment, with the down-playing of the formal time-constrained examination, may have contributed to the growth of plagiarism.

One of the most common forms of plagiarism identified among students is a failure to acknowledge the original author in papers (McCabe and Trevino, 1993). Several researchers perceive that lack of knowledge regarding correct ways of citing and paraphrasing information are factors contributing to plagiarism (White, 1993; Rosnow and Rosnow, 1995). However, Hale’s (1987) study provides evidence suggesting that plagiarism is not the result of confusion on the part of students. Yeo (2007) provides evidence of the extremely high proportions of students plagiarizing electronic sources, as well as the discipline dependence of plagiarism (with the highest incidence in engineering subjects). She also emphasises the apparent lack of seriousness with which undergraduate students perceive this type of misdemeanour.

The focus of this study is the incidence of plagiarism among accounting undergraduates in one Malaysian university. There is currently no evidence relating to plagiarism activities among accounting students, which examines the extent to which its incidence might be increasing in universities in Malaysia. Pennycook (1996) notes the differences in learning modes in the far East, notably the emphasis on memorization, and the importance of mastering the text, which contribute to culture-based notions of plagiarism. In a Malaysian context, O’Donoghue (1996) notes an expressed preference from undergraduate students for “teacher-centred passive learning” which may be inconsistent with the independent reading and research necessary for many coursework assignments.

Ashworth *et al.* (2003, p. 26) suggest that consequently we should not be surprised if students from different cultures are puzzled at being prevented from including text from accepted sources in their assignments:

... plagiarism can be seen to be part of a particular cultural configuration [which] assumes... the individual ownership of work; personal ownership, creativity or originality, and the view that knowledge has a history; and past authors must be acknowledged. All these things are ... implicated in a certain western modernist episteme.

Devlin and Gray (2007) note that plagiarism may be deemed acceptable in some cultures in that the copying of the work of expert authorities could be perceived as flattery. They note that for students whose second language is English, even the act of paraphrasing is puzzling since their limited command of English would usually make it impossible for them to improve on the original wording!

Therefore, this study investigates students' perceptions of the factors that contribute to the problem in order to be able to recommend strategies that might reduce its incidence.

Graycar and Smith (2002) provide a suitable framework for examination in likening plagiarism to other dishonest behaviour (i.e. likening educational fraud to corporate fraud) in that three common factors prevail: motivation to offend, opportunity, and the ability to rationalize the activity. By responding to each of the three factors, they suggest the implementation of strategies to reduce the supply of motivated offenders; introduce protective mechanisms, for prevention, and make the crime more difficult to commit. Most research into dishonest behaviour of this type has emphasised opportunity and prevention mechanisms, rather than individual attitudes. This paper focuses on the latter by examining student perceptions and attitudes associated with a propensity towards plagiarism. However, Devlin and Gray (2007) note that much of the existing literature concerns "cheating behaviour" – an umbrella grouping which includes plagiarism, falsification and other deceptive activities, so that it is frequently difficult to pinpoint plagiarism as the source of focus.

2. Literature review

Janowski (2002, p. 27) identifies the range of activities that might be thought to constitute plagiarism:

- buying or downloading a paper from a research service or a term paper-mill and offering it as your own;
- turning in another student's work, with or without that student's knowledge, as your own;
- copying any portion of another's work without proper acknowledgment;
- copying material from a source and supplying proper documentation, but leaving out quotation marks or failing to indent properly; and
- paraphrasing ideas and language from a source without proper documentation.

And also the range of possible consequences on its discovery:

- earn a grade of zero for the assignment or exam;
- failure in the subject or course; and
- expulsion from the course or university.

Previous studies across a number of disciplines have shown academic dishonesty to be a consistently common problem on college campuses over a number of years. The study by Hale (1987), designed in part to determine the incidence of reported plagiarism among college students, found that 55 per cent of the students in each of his two samples reported to have plagiarised material. Similarly, a study conducted by Ameen *et al.* (1996, p. 193) with accounting students at four large public universities in the USA found that 56 per cent of the students admitted cheating on an exam, project or written assignment. A more recent study by Lloyd (2000) found over 40 per cent of UK university students to have engaged in plagiarism; he concluded that more coursework, of similar types, in larger classes, with less formal contact between staff and students, all contributed to increases in the incidence of plagiarism.

Another concern, in addition to the incidence of plagiarism, is that of the attitudes of students and teachers towards plagiarism. Evans and Youmans (2000) used group discussions among English as a second language (ESL) students and teachers to explore differences in attitudes. The results revealed a gap between students' and teachers' perceptions of plagiarism, findings which provide some confirmation of the findings of Ashworth and Bannister (1997, pp. 191-2) which had found the student notion of plagiarism to be extremely unclear, especially with regard to the boundaries of what constituted one's own ideas. Sierles *et al.* (1980) showed that cheating and plagiarism appeared to be quite common among accounting students (56 per cent), attributed to the pressure to obtain high-grades. Their responses indicated that students felt most professors did not want the aggravation of enforcing rules against cheating and plagiarising, so that the great majority of students believed that the risk of being caught cheating or plagiarising was quite low.

Much of the prior research examining plagiarism in colleges and universities has been conducted by psychological researchers and their results have mainly been based on the responses of students from the liberal arts and social sciences. Prior research using the defining issues test (Rest, 1979) suggests that because of differences in curricula and self-selected personality traits, upper-level accounting students generally possess attitudes and perceptions that distinguish them from students majoring in liberal arts or the social sciences (Jeffrey, 1993; Ponemon and Glazer, 1990; St Pierre *et al.*, 1990). Therefore, it is important that further research on academic dishonesty be conducted with accounting students.

2.1 Internet plagiarism among college and university students

Cyberspace offers new and seemingly unlimited opportunities to gain easy access to information. A substantial and growing literature exists on the use of the internet for a multitude of purposes, ranging from literature searches to "chat rooms" of professional social workers interested in exploring one or more issues (Sterngold, 2004; Grant and Grobman, 1998; Harnack and Kleppinger, 1997; Marson, 1997). Web users are also witnessing a proliferation of online instructions and written information about how to access "good" information and how to critically analyse information sources (Cosgrave *et al.*, 1996).

Macdonald and Dunkelberger (1998) found that only 7 per cent of their sample of students cited information found on CD-ROM or via the internet as coming from on-line source, but rather cited the information as coming from a print source. On the other hand, Zack (1998) found that various colleges and universities were reporting an increase in cases of computer-aided cheating by students, particularly through the purchase of "model answer" papers from internet sources.

According to Auer and Krupar (2001, p. 417), cutting and pasting from computer-based information using networked computers is easier than retyping material from a book. This is often compounded by the recent trend of university-wide computing requirements, where universities require students to arrive on campus with a computer. Since, all students are required to have, or to have access to, computers, they are now capable of "cut and paste" plagiarism.

Nearly, universal access to the internet since 1998 has been cited as a reason for the decline in academic integrity, in particular regarding plagiarism. Young (2001, p. 26)

suggests that “several indicators point to widespread plagiarism on campus” while Bugeja (2001, p. 22) notes that:

... officials at some colleges say that in recent years they have seen a sharp increase in students cutting and pasting material into papers from web sites without attribution, or purchasing term papers from on-line term-paper mills.

Such speculation is supported by evidence from Scanlon and Neumann (2002, p. 377). They reported that 16.5 per cent of students admitted to cutting and pasting text without citation “sometimes” while 8 per cent admitted such activity “often” or “very frequently”; however, 50.4 per cent of students indicated that their peers did so. While only 8.3 per cent of students reported purchasing papers from on-line term paper mills “sometimes” or “very frequently” 62.2 per cent of students estimated that their peers patronise such sites with that regularity.

The internet has made cheating easier, promoting the development of forensic tools to help academics detect “cyber cheating”. However, such efforts to substantiate suspicions of plagiarism can still be extremely time consuming.

2.2 Factors contributing to plagiarism activities

Love and Simmons (1998, pp. 4-5) identified two broad factors influencing plagiarism, based on extensive interviews with masters degree students:

(1) *External contributing factors:*

- pressure (grade pressure, time pressure, task pressure); and
- professors.

(2) *Internal contributing factors:*

- negative personal attitudes;
- lack of awareness; and
- lack of competence.

Their interviews rely substantially on the findings of Ferrell and Ferguson’s (1993) Academic Misconduct Survey, which categorised a list of behaviours, through 41 statements of misconduct, into five constructs: cheating on test and assignments, use of illegal resources, *quasi*-misconduct, subtle manipulation, and italic manipulation.

The causes and situational factors found by Love and Simmons (1998) were very similar to those identified by other researchers, notably Park (2003), Caruana *et al.* (2000), Auer and Krupar (2001), Cummings *et al.* (2002) and Franklin-Stokes and Newstead (1995), and extended those identified by Roig and De Tommaso (1995).

Roig and De Tommaso (1995) measured academic dishonesty with a 24-item instrument; nine of the items captured the cheating component while the other 15 sought to measure plagiarism. The questionnaire used a seven-point likert scale anchored by 1 (never) and 7 (very frequently), so that a high score on the scale reflected higher-levels of cheating and plagiarism. Caruana *et al.* (2000) added a further nine items to this instrument to address situational factors. This 33-item instrument, originally tested on 300 Australian university students, forms the basis for the instrument adopted in this study. Minor contextual and cultural revisions allow it to be used to address issues concerning pressure to obtain good grades, student stress, weak sanctions, low chances of being caught, unwillingness of fellow students to expose

peers and the attitude of academic staff who are reluctant to report offenders. Love and Simmons (1998) and Scanlon and Neumann (2002) suggest six factors contributing to the incidence of plagiarism: lack of awareness, personal attitudes, availability of internet resources, lack of competence, pressure and institutional features, which will inform the hypotheses of this study:

- (1) *Lack of awareness.* Where students do not fully understand what constitutes plagiarism, or what the penalties for its detection are, they may not see it as a problem. A number of authors (White, 1993; Rosnow and Rosnow, 1995) report a lack of knowledge of citation, paraphrasing and referencing as contributory factors in the incidence of plagiarism.
- (2) *Personal attitudes.* Positive or negative attitudes and willingness to expend effort will be reflected in the incidence of plagiarism, since cheating may be seen as a suitable, if risky, alternative to hard work. Park (2003) includes both social pressure and deliberate signs of defiance in his plagiarism typology based on a review of the literature.
- (3) *Internet facilities.* Improved downloading facilities and wider broadband access have facilitated access to information, and simplified the process of “cut and paste” plagiarism from such sources. A number of authors (Zack, 1998; Auer and Krupar, 2001; Scanlon and Neumann, 2002) have speculated that the expansion of web site technology has contributed to plagiarism.
- (4) *Lack of competence.* Self-reported competence measures will reflect personal attitudes and may provide a different indication to that of raw cumulative grade point average (CGPA) scores. In some instances they may reflect a lack of confidence in completing assignments, at a technical or inter-personal level, which may contribute to plagiarism.
- (5) *Pressure.* Task, time and family pressures are all acknowledged as potential contributors to plagiarism. Love and Simmons (1998) distinguished grade, time and task pressures, and identify pressure as the single most important contributory factor.
- (6) *Institution.* Cheating and plagiarism continue to have increasing exposure in universities, thanks in part to high-profile incidents. Universities must now take plagiarism seriously, even if in the past it has not been seen as a priority. Institution-specific factors can take many forms, including the attitudes of lecturers and administrators to the incidence of plagiarism, and the associated prevention, detection and punishment mechanisms in place.

The literature relating to both “gender” and “academic performance” is conflicting, sufficiently so to preclude the generation of reliable hypotheses. Thus, while Roberts *et al.* (1997) suggest a higher propensity for males to cheat, conflicting evidence is reported by both Haines *et al.* (1986) and Franklin-Stokes and Newstead (1995). Similarly, the studies of Haines *et al.* (1986), Newstead *et al.* (1996) and Lipson and McGavern (1993) all reported higher achieving students to be associated with lower levels of cheating, but Franklin-Stokes and Newstead (1995) and Roberts *et al.* (1997) found no such relationship.

From the literature presented here it is clear that there have been few relevant published studies from outside the USA, UK and Australia. There are none that study

plagiarism among accounting undergraduate students in Malaysia. The key contributing factors driving the incidence of plagiarism might be different from those found in the USA because of contextual, cultural and religious differences and the attitudes of Malaysian universities to the education, detection and punishment of academic misconduct. The empirical evidence in this regard is very thin (Pennycook, 1996; O'Donoghue, 1996; Devlin and Gray, 2007) so that this study attempts to bridge the gap in knowledge by addressing two specific research questions for undergraduate students at one Malaysian university campus:

- (1) What are the factors that contribute to the plagiarism activities among undergraduate accounting students?
- (2) Is the incidence of plagiarism associated with the personal attributes of the students?

These overarching research questions are subsequently developed in Section 4 to provide six hypotheses for testing.

3. Research method

3.1 Data and variables

The study population consists of all bachelor of accountancy (BAcc) students from a single campus of one Malaysian university enrolled in March 2003. There were 1,409 candidates enrolled in the program at that date, who had gained entry by three different means of enrolment, i.e. the matriculation route (M) – competitive direct entry for talented (mainly) school leavers, expected to maintain an excellent grade-point average; fast-track (F)-students overloading subjects for projected earlier completion, and diploma holder (D) – students who first complete an accounting diploma before being permitted entry onto the BAcc. Matriculation, and fast-track students are always full-time, while diploma students may exceptionally be part-time. The bachelor program is particularly appropriate for a study of this nature because of the significant non-examination component of its assessment: English is the language of instruction, and narrative assignments would normally comprise in excess of 50 per cent of the total assessment for any course.

The literature (Roberts *et al.*, 1997; Newstead *et al.*, 1996) suggests that personal factors may be a contributory factor in the incidence of plagiarism, so the data were designed to specify both gender differences and competence-based differences (measured by CGPA).

3.2 Sample

A sample of around 20 per cent of the student body was contemplated in order to provide a sufficient number for statistical comparisons, but a random sample was rejected on the grounds that it might not be representative of all entry modes. A stratified random sampling technique, following Sekaran (2003, p. 280) was therefore adopted with one quarter of classes in each mode selected for sampling in their entirety: five classes from the matriculation stream; four classes from the fast track stream and three classes from the diploma holder stream. This sample produced an enrolment of 302 candidates, of which 286 completed all aspects of the survey. These respondents were classified as detailed in Table I.

The identification of 12 specific classes for sampling significantly eased the process of data collection, because the survey could be completed during the tutorial classes conducted during a common week.

The predominance of females in the BAcc. program made gender-difference testing vulnerable to the specified data collection procedures, but these fears were not justified. The proportion of males to females in the specified classes was representative of the undergraduate accounting population as a whole (of the order 3:1) giving in total, 214 females and 72 males in the sample of 286.

The research strategy for this study was based on survey using a paper-based hand-delivered questionnaire. The questionnaire was distributed to each of the candidates in the selected classes and they were given approximately ten minutes to complete the questionnaire. The process was monitored by one of the authors and all completed questionnaires collected by hand for immediate analysis. The scope of the survey was intended to address the two broad research questions identified above.

3.3 Research instrument

The survey instrument was divided into three main sections.

3.3.1 Section A. This section consisted of questions regarding the students' experience of how they acknowledge sources of information in their written assignments, their source of information and the penalty they perceive should be imposed on students who are caught plagiarising. The questions were designed to generate nominal and ordinal responses.

3.3.2 Section B. This section, following Caruana *et al.* (2000), attempted to determine the possible factors that contribute to plagiarism activities. The 33-item instrument addressed each of the hypotheses by highlighting issues of pressure (four questions), the nature of the institution (seven questions), personal attitudes (nine questions), lack of awareness and understanding (four questions), lack of competence (six questions) and internet facilities (three questions). Each question contained a four-point Likert Scale ranging from 1 – strongly disagree to 4 – strongly agree. The survey instrument is attached as Appendix 1.

3.3.3 Section C. This section consisted of questions regarding respondents' background such as gender, mode of entry, and current CGPA score. The questions sought nominal or ordinal responses.

3.4 Pilot testing

In order to ensure the validity of the questions, a pilot test of the questionnaire was conducted with 30 undergraduate accounting students, who were not part of the main study. Their reaction was sought to the phrasing of questions in Section C, and to the applicability of the wording of questions in Sections A and B, originally devised for US and Australian audiences, respectively. In response to their feedback, minor changes

Entry type	Enrolment	Males	Females
Matriculation	121	26	95
Fast track	79	27	52
Diploma	86	19	67
Total	286	72	214

Table I.
Student sample: gender
and entry type

were made to the original questionnaire to ensure the students were able to understand the questions easily.

4. Hypothesis development

The earlier literature (Love and Simmons, 1998; Scanlon and Neumann, 2002) has suggested six factors contributing to the incidence of plagiarism: lack of awareness, personal attitude, internet facilities, lack of competence, pressure and the nature of the institution. A principal components analysis was conducted for the data of this study to determine how closely the factor structure resembled those in prior studies.

4.1 Results of factor analysis

Using principal components and varimax rotation six factors were extracted from the 33 specified items. Table II shows the loading of the variables on to the six factors (for items with correlation coefficients greater than 0.5) together with their labelling. Table III indicates how the factor scores might be interpreted. The six factors explain 50.3 per cent of the variance in the dataset. The analysis passed both the Bartlett's test of sphericity (χ^2 significance = 0) and the Kaiser-Meyer-Ohlin measure of sampling adequacy (0.838).

Items	Principal components					
	1	2	3	4	5	6
<i>Lack of awareness</i>						
B8	0.577					
B9	0.557					
<i>Personal attitude</i>						
B14		0.646				
B4		0.622				
B13		0.576				
B16		0.515				
B15		0.501				
<i>Availability of internet facilities</i>						
B32			0.888			
B33			0.726			
B31			0.694			
<i>Lack of competence</i>						
B25				0.672		
B5				0.631		
B1				0.601		
B11				0.566		
<i>Pressure</i>						
B26					0.671	
B23					0.594	
B24					0.536	
<i>Institution</i>						
B17						0.623
B19						0.546
Variance explained (per cent)	2.19	9.2	6.2	4.6	4.3	4.1
Cumulative variance explained (per cent)	2.19	31.1	37.3	41.9	46.2	50.3

Table II.
Varimax rotated
principal components
analysis ($r > 0.5$)

No.	Factors
1. Lack of awareness	B8 – I do not understand what constitutes plagiarism B9 – I do not see plagiarism as a problem
2. Personal attitudes	B4 – I do not have the desire to work or learn B13 – I do not feel the need for knowledge in the future B14 – I want to avoid hard work B15 – I am not interested in the topic B16 – I am lazy and used to delaying work
3. Availability of internet facilities	B31 – I think that cutting and pasting from the internet and word processing is much easier and faster B32 – I find it is easy to download articles from web sites B33 – I find that there is too much information available in electronic format especially from web sites
4. Lack of competence	B1 – I do not have the confidence to prepare a good assignment B5 – I find it difficult to construct sentences in English B11 – I have poor research skills B25 – I have difficulty in understanding articles in English
5. Pressure	B23 – I have limited time to finish work B24 – I feel pressure to complete too many assignments during a given time period B26 – I have too many subjects in one particular semester B17 – I have never attended any formal course conducted by university or lecturer on plagiarism.
6. Institution	B19 – I do not know the legal implication of plagiarism

Table III.
Factors contributing
to plagiarism activities

The resulting factor labels in this study correspond with those suggested by Love and Simmons (1998) and Scanlon and Neumann (2002), and provide the basis for the development of hypotheses.

The relevance of the factors obtained might be interpreted as follows.

4.1.1 Factor 1 – lack of awareness. This factor suggests that the students do not fully understand what constitutes plagiarism and do not see it as a problem. They might not be appropriately aware because they have not attended a course concerned with citation and referencing. This supports the findings of researchers (White, 1993; Rosnow and Rosnow, 1995) who perceive that lack of knowledge about citation and paraphrasing is a factor which contributes to plagiarism. Analysis of this factor contributes to the testing of *H1*.

4.1.2 Factor 2 – personal attitudes. The factor suggests that negative attitudes towards work, including lack of interest and laziness, are consistent with the incidence of plagiarism, since they provide students with the easiest way to complete their assignment. Analysis of this factor contributes to the testing of *H2*.

4.1.3 Factor 3 – availability of internet facilities. The expansion of technology through web sites and the internet allows students improved access to the information needed for their assignments. The downloading facility of whole paper from the internet has simplified the process of plagiarism, and promoted its growth. This is consistent with the findings of other researchers (Auer and Krupar, 2001; Zack, 1998; Scanlon and Neumann, 2002). Analysis of this factor contributes to the testing of *H3*.

4.1.4 *Factor 4 – lack of competence.* Lack of competence is consistent with the difficulties faced by students both in understanding articles and in constructing sentences in English. As a result many lack the confidence to prepare a good assignment. This deficiency may encourage the student to copy from other sources, such as paper from internet, assignments from peers or previous theses without appropriate acknowledgement of the authors. Analysis of this factor contributes to the testing of *H4*.

4.1.5 *Factor 5 – pressure.* Pressure to complete many assignments during a given time period, with limited time in which to finish the work may lead students to plagiarism. Love and Simmons (1998), identified pressure as the strongest single factor contributing to the possibility of plagiarising. The authors viewed the dominant types of pressure to be grade pressure, time pressure and task pressure, each of which was interrelated. Analysis of this factor contributes to the testing of *H5*.

4.1.6 *Factor 6 – institution.* Institution-specific factors may contribute to the occurrence of plagiarism. This may be attributable to the attitudes of lecturers or student perceptions of the lack of risk attached to committing plagiarism. Historically, plagiarism may have been seen to be a relatively low key-issue for universities, but recent high-profile incidents (notably in UK and Australia) have ensured that this is no longer the case, and that all universities must take plagiarism seriously. Analysis of this factor contributes to the testing of *H6*.

The six hypotheses represent an elaboration of our two original research questions, and might formally be stated as follows:

- H1.* Lack of awareness and understanding of plagiarism concepts contributes to increased self-reporting of plagiarism activity.
- H2.* Negative personal attitudes are positively associated with self-reported plagiarism activities.
- H3.* The availability of internet facilities increases the level of self-reported plagiarism activity.
- H4.* Low levels of competence are associated with the incidence of self-reported plagiarism activity.
- H5.* Students who are highly pressured (by family, task commitment or time factors) are more likely to self-report plagiarism activities.
- H6.* Ignorance of the institution's regulations (on the consequences of plagiarism) is positively associated with self-reported plagiarism activity.

5. Findings

Discussion of the data analysis is based on the results of the questionnaire conducted with the 286 respondents. Their views represent perceptions of the relative importance of factors contributing to plagiarism activities among this group of undergraduate accounting students.

Table IV provides descriptive statistics, which show the distribution of the respondents by gender, mode of enrolment and CGPA score. χ^2 tests suggested that the three variables were not independent, but that there was a relationship between CGPA score and mode of entry, in that lower CGPA scores were associated with fast-track enrolment ($p = 0.01$).

In Section A of the questionnaire, the respondents were asked about the sources of information used to complete an assignment. The results are presented in Table V.

The great majority of students used articles from the internet to complete their assignments, and this, together with print books, were the most popular sources. An examination of gender differences in access to sources revealed that males were more likely to access theses from previous students ($p = 0.011$), and that females were more likely to use peer discussion ($p = 0.034$). An examination of CGPA differences in access to sources revealed that stronger students, with CGPA between 3.00 and 4.00, were less likely to access books for their assignments than were weaker students, with CGPA less than 2.49, ($p = 0.042$). The weaker students were more likely to utilise both peer discussion ($p = 0.001$) and discussions with lecturers ($p = 0.008$). Among the enrolment modes, diploma students were significantly more likely to access print-based journals ($p = 0.001$).

Table VI reveals the students' method of acknowledgement of the source of information in their assignments.

Based on Table VI, 230 (i.e. 80.4 per cent) of the respondents acknowledged the source of information in the reference list of their assignment, but the majority of these (130) made no specific citation of authorship elsewhere in the assignment. Most seriously 27 students (9.4 per cent of the total) did not state their source of information

Grade point average	Male	Female	Matriculation	Fast track	Diploma
0	9	12	6	3	12
1	7	37	8	34	2
2	28	76	41	28	35
3	20	76	52	12	32
4	8	13	14	2	5
Total	72	214	121	79	86

Table IV.
Distribution of
respondents

Source of information	No. of Students	Percentage
Articles on internet	262	91.6
Books	249	87.1
Articles in journals	205	71.1
Peer discussion	178	62.2
Lecturer	151	52.8
Previous theses	98	34.3
Others	11	3.8

Table V.
Frequency of source of
information data

Acknowledgement of source of information	No. of students	Percentage
Show in reference list	230	80.4
Quote author's name	116	40.6
Show as footnote	34	11.9
Do not state anywhere	27	9.4

Table VI.
Frequency of
acknowledgement of
source of information

anywhere in the assignment, even in the reference list. Thus, the incidence of plagiarism among this group of undergraduate accounting students was perceived as significant, and for the purposes of analysis the focus of the study was on this most serious form of plagiarism: no source of information is specified anywhere in the text (as reported by 27 respondents).

An examination of gender influences on sources showed that females were more likely to quote the author name ($p = 0.04$), whereas males were more likely not to have stated a source of any kind ($p = 0.045$). CGPA differences showed that the weaker students were more likely not to have stated a source ($p = 0.019$).

Table VII details the degree of punishment perceived as being the most appropriate for those identified to have committed plagiarism. The range of punishments provided were those detailed in the university's handbook – with “loss of scholarship” specified as a possible cash penalty.

An examination of gender differences in the responses showed that females were significantly more likely to support a one semester suspension ($p = 0.044$). There were no differences attributable to CGPA scores. With regard to enrolment mode, fast-track students were significantly less inclined to bar students caught plagiarising ($p = 0.015$), and more likely to favour the imposition of a cash penalty ($p = 0.020$).

Appendix 2 details the mean scores for each of the 33 items of Section B of the survey. Responses to these items form the basis of the subsequent analysis.

5.1 Hypothesis testing

In order to test the hypotheses, the significance of any association (measured by Spearman's ρ) between the above questions, and the incidence of self-reported plagiarism is observed. Table VIII facilitates a test of the hypotheses by detailing the relationships between the groups of survey items and the measure of plagiarism based on absence of citation or referencing.

H1 examined the relationship between those items associated with “understanding” and “awareness” (i.e. B8 and B9, from factor 1, together with items B20 and B21) and the attribution variable. Significant associations between awareness and plagiarism were evident from B8 (no understanding of what constitutes plagiarism), B9 (plagiarism is not a problem) and B21 (lack of understanding of proper citation methods). *H1* was therefore supported.

H2 examined the relationship between those items associated with individual “attitude” (B4, B13, B14, B15 and B16, from factor 2, together with items B3, B6, B7 and B28) and the citation variables. Again the evidence supporting a relationship between attitude and plagiarism was mixed, but highly significant associations were apparent between plagiarism and: B3 (not important to acknowledge the author); B4 (lack of

Punishment	No. of students	Percentage
Dismiss from university	9	3.1
Suspend for one semester	52	18.2
Bar from the course	73	25.5
Impose cash penalty	171	59.8

Table VII.
Recommended
punishment for those
caught plagiarising

Note: Some respondents recommended multiple punishments

	Item	Correlation (<i>r</i> (<i>p</i>))
	<i>Factor 1: lack of awareness</i>	
B8	I do not understand what constitutes plagiarism	0.129 (0.029)
B9	I do not see plagiarism as a problem.	0.103 (0.081)
	<i>Factor 2: personal attitudes</i>	
B4	I do not have the desire to work or learn.	0.100 (0.092)
B13	I do not see the need for knowledge in the future	0.097 (0.100)
B14	I want to avoid hard work	0.030 (0.611)
B15	I am not interested in the topic	-0.009 (0.873)
B16	I am lazy and used to delaying my work	0.056 (0.346)
	<i>Factor 3: availability of internet facilities</i>	
B31	I think that cutting and pasting from the internet and word processing is much easier and faster	0.067 (0.259)
B32	I found it is easy to download articles from web sites	0.018 (0.756)
B33	I found that there is too much information available in electronic format especially from web sites	0.064 (0.280)
	<i>Factor 4: lack of competence</i>	
B1	I do not have the confidence to prepare a good assignment	0.032 (0.588)
B5	I find it difficult to construct sentences in English	0.027 (0.654)
B11	I have poor research skills	0.070 (0.239)
B25	I have difficulty in understanding articles in English	0.077 (0.194)
	<i>Factor 5: pressure</i>	
B23	I have limited time to finish my work	0.072 (0.225)
B24	I feel pressure to complete many assignments during a given time period	-0.033 (0.584)
B26	I have too many subjects in one particular semester	0.043 (0.470)
	<i>Factor 6: institution</i>	
B17	I never attended any formal course conducted by university or lecturer on plagiarism	0.055 (0.357)
B19	I do not know the legal implications of plagiarism	0.125 (0.034)
	<i>Remaining items</i>	
B2	I am not aware of institutional rules and regulations	0.171 (0.004)
B3	I feel it is not important to acknowledge the original writer	0.171 (0.004)
B6	I feel it is easier to plagiarise because the types of academic assessment given by the lecturers are similar	0.135 (0.023)
B7	I am not afraid of being caught by the lecturer	0.138 (0.020)
B10.	I found the lecturer reluctant to take action against students who commit plagiarism	0.092 (0.122)
B12	I found the type of assessment allowed me to plagiarise	0.111 (0.061)
B18	I cannot do well in preparing my assignment	0.063 (0.290)
B20	I do not understand the subject matter	0.020 (0.742)
B21	I do not know how to properly acknowledge the author through citation	0.206 (0.001)
B22	My family has high expectations of me to obtain good grades	-0.003 (0.957)
B27	I have poor time management skills	0.068 (0.253)
B28	I think that the lecturer could not identify it if I plagiarise	0.155 (0.009)
		(continued)

Table VIII.
Grouped correlation
coefficients for
hypothesis testing

	Item	Correlation (<i>r</i> (<i>p</i>))
B29	My lecturer does not know the consequences of plagiarism for the student.	0.106 (0.074)
B30	Action taken by the university to punish students who are caught plagiarising is time consuming	0.019 (0.751)
C1	Gender	<i>-0.143 (0.015)</i>
C2	Mode of entry	<i>-0.069 (0.245)</i>
C3	CGPA	<i>-0.133 (0.024)</i>

Notes: Spearman correlation coefficients between the item and the plagiarism measure with levels of significance in parentheses. Items significant at the 5 per cent level italicised

Table VIII.

desire to learn); B6 (assessment type facilitates plagiarism); B7 (no fear of being caught), and B28 (lecturer could not identify incidence of plagiarism). *H2* was therefore supported.

H3 examined the relationship between those items associated with “internet” usage (B31, B32 and B33 in factor 3) and the citation variable. All the relationships between internet usage and the incidence of plagiarism were weak, so *H3* could not be supported.

H4 examined the relationship between those items associated with “lack of competence” (B1, B5, B11 and B25 in factor 4) and the citation variable. Evidence of associations between plagiarism and competence was weak, so that Hypothesis *H4* could not be supported.

H5 examined the evidence supporting a relationship between time and task pressure (B23, B24 and B26 from factor 5) and plagiarism. There were no relationships significant at the 10 per cent level so *H5* could not be supported.

H6 examined the relationship between those items associated with “institution” (B17, B19 from factor 6, together with item B2) and the citation variable. The evidence supporting a relationship between institution and plagiarism was mixed, but there were significant associations with B19 (lack of knowledge of the implications of incidence of plagiarism), and B2 (ignorance of institutional rules and regulation regarding plagiarism). *H6* was therefore supported.

The hypotheses thus supported the existence of significant relationships between the incidence of plagiarism and lack of awareness, personal attitudes and institutional factors.

In addition, a multivariate regression model was constructed to identify a parsimonious set of variables with optimum explanatory power. For the plagiarism activity – no sources cited – a three variable model ($F = 8.07$, $p = 0.001$) explained 7.9 per cent of self-reported plagiarism. The model suggested that plagiarism was dependent on gender ($p = 0.033$), ignorance (B21) – not knowing how to cite properly ($p = 0.001$) and attitude (B3) – author acknowledgement is not important ($p = 0.010$) i.e.:

$$\text{Plagiarism} = -0.236 - 0.083 \times \text{Gender} + 0.074 \times \text{B21} + 0.051 \times \text{B3}$$

The regression equation suggested that plagiarism was associated with males, with negative attitudes towards learning, and those who are confused over what constituted appropriate citation. Despite, the low overall explanatory power of the equation, each of the variables was statistically significant at the 10 per cent level.

6. Discussion and recommendations

The current study has identified several variables that were significantly associated with plagiarism activity among a group of Malaysian undergraduate accounting students. A number of these variables contributed to the factors previously identified by Love and Simmons (1998) and Scanlon and Neumann (2002) (i.e. pressure, institution, personal attitudes, lack of awareness, lack of competence and the availability of internet facilities). However, the hypothesis testing in this study did not support a direct link between all of these factors and the self-reported incidence of plagiarism. In particular, no evidence was found to support a significant link between plagiarism and “pressure” (H5), “competence” (H4) or ease of access to “internet” sources (H3).

Of particular interest are the detailed findings in each of a number of areas:

- *Attitude.* The values and beliefs of those self-reporting plagiarism activity was both interesting and alarming: acknowledgement of sources was not perceived to be important ($p = 0.004$) while, the types of course, work assessment used were thought to make plagiarism easier ($p = 0.023$); there was no fear of being caught ($p = 0.020$), apparently because there was a perception that the lecturer cannot/will not successfully identify incidence of plagiarism ($p = 0.009$). These findings supported those of Yeo (2007) and Devlin and Gray (2007).
- *Ignorance/awareness.* There was clearly much confusion among students of what constituted plagiarism ($p = 0.024$), what penalties resulted from its identification ($p = 0.004$) and what the appropriate procedures were for citation and author acknowledgement ($p = 0.001$). There was no direct evidence to suggest that English language weakness contributed to plagiarism activity, though English difficulty was associated with the weaker students ($p = 0.017$).
- *Gender.* Strong evidence ($p = 0.015$) was presented to suggest that males were more likely than females to engage in plagiarism activity. These findings supported those of Roberts *et al.* (1997).
- *Ability.* Significant evidence suggested that the academically less gifted (as measured through both CGPA ($p = 0.018$) and lack of subject understanding ($p = 0.051$), were more likely to engage in plagiarism activity. These findings supported those of Haines *et al.* (1986), Newstead *et al.* (1996) and Lipson and McGavern (1993).

Given the significance of both the “gender” and “ability” variables, differences in item responses were examined relative to both. Correlation coefficients are reported in Appendix 3. An examination of gender differences in the responses showed that females were less confident in assignment writing B1 ($p = 0.007$); more likely to admit to poor research skills B11 ($p = 0.002$), and more likely to admit difficulties in understanding journal articles B25 ($p = 0.037$). All results were consistent with the male-overconfidence literature (Macoby and Jacklin, 1974; Lenney *et al.*, 1983; So and Smith, 2004). With regard to CGPA differences, the stronger students were prepared to admit difficulties with articles B25 ($p = 0.017$), and also recognized that lecturers were reluctant to act against those committing plagiarism B10 ($p = 0.042$). This last finding echoes that of McCabe and Pavela (2004, p. 13), who point to an important consequence of the failure to solve the plagiarism problem, in that “honest” students may be forced to engage in such behaviour in order to restore the “level-playing field” so that they can continue to compete effectively with their colleagues.

The findings of the study have significant implications for educators:

- More instruction is required, at course and subject level, to alleviate confusion regarding plagiarism activities, and to improve levels of understanding of citation and referencing. Electronic means of detection might be used in an educative role to demonstrate the meaning and extent of plagiarism.
- More attention should be paid to ensuring that teaching and administrative staff are vigilant in their approach to the identification and punishment of plagiarism. Appropriate measures might include the streamlining of processes for dealing with those suspected of plagiarism, and the appointment of school-based academic integrity officers. Such measures might help to overcome current perceptions that plagiarism will be neither detected nor punished.
- Alternative forms of assessment should be sought, that eliminate, or at least alleviate, opportunities for plagiarism. James *et al.* (2002), and Devlin (2003), among others, suggest that more attention devoted to the design of assessments will reduce the opportunities for plagiarism. Sigthorsson (2005) even suggests that such assessments might recognize the significant skills that students have developed in applying “cut-and-paste” blog writing and web networking technologies.
- Where alternative forms of assessment are impracticable, more advanced screening technology (e.g. that provided by Turnitin) might be implemented to improve detection rates. The findings of this study suggest that particular attention be directed towards under-performing males, who are exhibiting negative attitudes to their course. Sheard *et al.* (2003) emphasise the importance of developing strategies for dealing with plagiarism that do not impact negatively on the learning experience. A return to assessment wholly through independent time-constrained assessments (i.e. tests and closed-book examinations) may effectively eliminate plagiarism, but at a significant cost to personal learning and skill acquisition. Sheard *et al.* (2003) see “prevention and punishment” as short-term strategies, while student recognition of the benefits of lifelong learning is the only feasible long-term alternative.

This study was conducted on a single campus of one university, so it is possible that the results may not be generalised to the rest of the Malaysian university sector. Further, investigation of plagiarism activities needs to be conducted in Malaysia to overcome some of the limitations of this study: the number of respondents self-reporting plagiarism was relatively small, and the findings are based on perceptions rather than on the incidence of actual plagiarism activity. Devlin and Gray (2007) note that the empirical findings on plagiarism in higher-education (including this study) are based predominantly on participant response to standard instruments. Such methods are unlikely to reveal the clear underlying motivations involved, so that future research should involve actual incidents of plagiarism and an examination of the motivation of the individuals responsible.

References

- Ameen, E.C., Guffey, D.M. and McMillan, J.J. (1996), “Accounting students’ perceptions of questionable academic practices and factors affecting their propensity to cheat”, *Accounting Education: An International Journal*, Vol. 5 No. 3, pp. 191-205.

- Ashworth, P. and Bannister, P. (1997), "Guilty in whose eyes? University students' perceptions of cheating and plagiarism in academic work and assessment", *Studies in Higher Education*, Vol. 22 No. 2, pp. 187-204.
- Ashworth, P., Freewood, M. and Macdonald, R. (2003), "The student lifeworld and the meanings of plagiarism", *Journal of Phenomenological Psychology*, Vol. 34 No. 2, pp. 257-78.
- Auer, N.J. and Krupar, E.M. (2001), "Mouse click plagiarism: the role of technology in plagiarism and the librarians' role in combating it", *Library Trends*, Vol. 49 No. 3, pp. 415-35.
- Bugeja, M.J. (2001), "Collegiate copycats", *Editor & Publisher*, Vol. 134 No. 46, p. 22.
- Caruana, A., Ramaseshan, B. and Ewing, M.T. (2000), "The effect of anomie on academic dishonesty among university students", *The International Journal of Education Management*, Vol. 14 No. 1, pp. 23-30.
- CIMA Ethical Guidelines (1992), *Chartered Institute of Management Accountants*, CIMA Ethical Guidelines, London.
- Cosgrave, T., Engle, M. and Ormondroyd, J. (1996), "How to critically analyze information sources (online)", available at: www.library.cornell.edu/okuref/research/ski1126.htm
- Cummings, R., Maddux, C.D., Harlow, S. and Dyas, L. (2002), "Academic misconduct in undergraduate teacher education students and its relationship to their principled moral reasoning", *Journal of Instructional Psychology*, Vol. 29 No. 4, pp. 1-11.
- Davis, S.F., Grover, C.A., Becker, A.H. and McGregor, L.N. (1992), "Academic dishonesty: prevalence, determinants, techniques and punishment", *Teaching of Psychology*, Vol. 19, pp. 16-20.
- Devlin, M. (2003), "Policy, preparation, prevention and punishment: one faculty's holistic approach to minimizing plagiarism", in Marsden, H. and Hicks, M. (Eds), *Educational Integrity: Plagiarism and Other Perplexities. Refereed Proceedings of the Inaugural Educational Integrity Conference*, University of South Australia, Adelaide, November, 39-47, pp. 39-47.
- Devlin, M. and Gray, K. (2007), "In their own words: a qualitative study of the reasons Australian students plagiarize", *Higher Education Research & Development*, Vol. 26 No. 2, pp. 181-98.
- Evans, F.B. and Youmans, M. (2000), "ESL writers discuss plagiarism: the social construction of ideologies", *Journal of Education*, Vol. 182 No. 3, pp. 49-65.
- Ferrell, C.M. and Ferguson, W.F. (1993), "Assessing graduate education students' propensity toward academic misconduct", paper presented at the Annual Meeting of The American Educational Research Association, Atlanta, GA.
- Franklin-Stokes, A. and Newstead, S.E. (1995), "Undergraduate cheating: who does what and why?", *Studies In Higher Education*, Vol. 20 No. 2, pp. 159-72.
- Grant, G.S. and Grobman, L.M. (1998), *The Social Worker's Internet Handbook*, White Hat, Harrisburg, PA.
- Graycar, A. and Smith, R. (2002), *Identifying and Responding to Corporate Fraud in the 21st Century*, Australian Institute of Criminology, Canberra, March.
- Haines, V.J., Diekhoff, G.M., LaBeff, E.E. and Clark, R.E. (1986), "College cheating: immaturity, lack of commitment and the neutralizing attitude", *Research in Higher Education*, Vol. 25 No. 4, pp. 342-54.
- Hale, J.L. (1987), "lagiarism in the classroom", *Communication Research Report*, Vol. 4, p. 67.
- Harnack, A. and Kleppinger, E. (1997), *The Internet Guide for Students and Writers*, St Martin's Griffin, New York, NY.

- James, R., McInnis, C. and Devlin, M. (2002), *Assessing Learning in Australian Universities: Ideas Strategies and Resources for Quality in Assessment*, University of Melbourne, DEST Centre for the Study of Higher Education, Melbourne, available at: www.cshe.unimelb.edu.au
- Janowski, A. (2002), "Plagiarism: prevention, not PROSECUTION", *Book Report*, Vol. 21 No. 2, pp. 1-4.
- Jeffrey, C. (1993), "Ethical development of accounting students, non-accounting business students and liberal arts students", *Issues in Accounting Education*, Vol. 8 No. 1, pp. 86-96.
- Karlin, M., Michaels, C. and Podlogar, S. (1988), "An empirical investigation of actual cheating in a large sample of undergraduates", *Research in Higher Education*, Vol. 29 No. 4, pp. 359-64.
- Lenney, E., Gold, J. and Browning, C. (1983), "Sex differences in self confidence: the influence of comparison to others' ability level", *Sex Roles*, Vol. 9 No. 9, pp. 925-42.
- Lipson, A. and McGavern, N. (1993), "Undergraduate academic dishonesty at MIT", paper presented at 33rd annual meeting of the Association for Institutional Research, Chicago, IL.
- Lloyd, J. (2000), *Plagiarism: Prevention is better than Cure*, *Educational Technology Conference Paper*, Cardiff University, Cardiff.
- Love, P.G. and Simmons, J. (1998), "Factors influencing cheating and plagiarism among graduate students in a college of education", *College Student Journal*, Vol. 32 No. 4, pp. 1-8.
- McCabe, D.L. and Pavela, G. (2004), "Ten (updated) principles of academic integrity", *Change*, Vol. 36, pp. 10-15.
- McCabe, D.L. and Trevino, L.K. (1993), "Academic dishonesty: honor codes and other contextual influences", *Journal of Higher Education*, Vol. 64, pp. 521-38.
- Macdonald, B. and Dunkelberger, R. (1998), "Full-text database dependency: an emerging trend among undergraduate library users", *Research Strategies*, Vol. 16 No. 4, pp. 301-7.
- Macoby, E.E. and Jacklin, C.N. (1974), *The Psychology of Sex Differences*, Stanford University Press, Stanford, CA.
- Marson, S.M. (1997), "Major uses of the internet for social workers: a brief report for new users", *Health & Social Work*, Vol. 22 No. 2, pp. 21-8.
- New Straits Times-Management Times* (2003), "Clamp down on Plagiarism", *New Straits Times-Management*, 22 January.
- Newstead, S.E., Franklin-Stokes, A. and Armstead, P. (1996), "Individual differences in student cheating", *Journal of Educational Psychology*, Vol. 88 No. 2, pp. 229-41.
- O'Donoghue, T. (1996), "Malaysian Chinese student's perceptions of what is necessary for their academic success in Australia: a case study at one university", *Journal of Further & Higher Education*, Vol. 20 No. 2, pp. 67-80.
- Palmquist, M. (2003), "The bedford researcher", available at: www.bedfordresearcher.com/links/writing_resources.cfm?type = writing&discipline = writing_plagiarism
- Park, C. (2003), "In other (people's) words: plagiarism by university students – literature and lessons", *Assessment and Evaluation in Higher Education*, Vol. 28 No. 5, pp. 471-88.
- Pennycook, A. (1996), "Borrowing others' words: text, ownership, memory and plagiarism", *TESOL Quarterly*, Vol. 30, pp. 201-3.
- Ponemon, L.A. and Glazer, A. (1990), "Accounting education and ethical development: the influence of liberal learning on students and alumni in accounting practice", *Issues In Accounting Education*, Vol. 5 No. 2, pp. 195-208.
- Rest, J.R. (1979), *Guide For The Defining Issues Test*, Center for the Study of Ethical Development, Minneapolis, MN.

- Roberts, P., Anderson, J. and Yanish, P. (1997), *Academic Misconduct: Where Do We Start?*, Northern Rocky Research Association, Jackson, WY.
- Roig, M. and De Tommaso, L. (1995), "Are college cheating and plagiarism related to academic procrastination?", *Psychological Reports*, Vol. 77, pp. 691-8.
- Rosnow, R.L. and Rosnow, M. (1995), *Writing Papers In Psychology*, 3rd ed., Brooks/Cole, Pacific Grove, CA.
- Rust, C. (2002), "The impact of assessment on student learning", *Active Learning in Higher Education*, Vol. 3 No. 2, pp. 145-58.
- Scanlon, P.M. and Neumann, D.R. (2002), "Internet plagiarism among college students", *Journal of College Student Development*, Vol. 43, p. 374.
- Sekaran, U. (2003), *Research Methods for Business: A Skill Building Approach*, 4th ed., Wiley, New York, NY.
- Sheard, J., Markham, S. and Dick, M. (2003), "Investigating differences in cheating behaviours of IT undergraduate and graduate students: the maturity and motivation factors", *Higher Education Research & Development*, Vol. 22 No. 1, pp. 91-108.
- Sierles, F., Hendrickx, I. and Circle, S. (1980), "Cheating in medical school", *Journal of Medical Education*, Vol. 55, pp. 124-5.
- Sigthorsson, G. (2005), "Copy/paste: the joys of plagiarism", *M/C Journal*, Vol. 8 No. 3, available at: <http://journal.media-culture.org.au/0507/04-sigthorsson.php>
- So, S. and Smith, M. (2004), "Multivariate decision accuracy and the presentation of accounting information", *Accounting Forum*, Vol. 28 No. 3, pp. 283-306.
- St Pierre, K.E., Nelson, E.S. and Gabbin, A.L. (1990), "A study of the ethical development of accounting majors in relation to other business and non-business disciplines", *The Accounting Educators Journal*, Vol. 3 No. 1, pp. 23-35.
- Sterngold, A. (2004), "Confronting plagiarism", *Change*, Vol. 36, pp. 16-21.
- White, E.M. (1993), "Too many campuses want to sweep student plagiarism under the rug", *The Chronicle of Higher Education*, Vol. 39 No. 25, p. A44.
- Yeo, S. (2007), "First-year university science and engineering students' understanding of plagiarism", *Higher Education Research & Development*, Vol. 26 No. 2, pp. 199-216.
- Young, J.R. (2001), "The cat-and-mouse game of plagiarism detection", *The Chronicle of Higher Education*, Vol. 47 No. 43, pp. A26-7.
- Zack, I. (1998), "Universities finding a sharp rise in computer aided cheating", *New York Times*, Vol. 1998, September 23, Section B, pp. 11-30.

Appendix 1. Students perception of factors contributing to plagiarism activities among undergraduate accounting students

Introduction to questionnaire

This survey seeks your opinions about the use of reference sources used in academic writing. We would like to know your perceptions of the factors which contribute to misuse of sources when writing reports or essays.

A simple definition of plagiarism is the habit of taking the words or ideas of another writer and including those words or ideas in your own writing as if they were your own. In other words, you do not correctly show which words are yours and which words are from another writer. Plagiarism may vary in seriousness from changing a few words (paraphrasing) of the original text without acknowledgement to its writer, to copying large portions of text with no modification and without acknowledging the original writer.

Please answer the following questions as honestly and carefully as you can. Information gathered is strictly on a private, anonymous and confidential basis. Thank you very much for your cooperation.

Section A

Please tick (✓) an appropriate answer

- (1) Please indicate the sources of information you use to complete an assignment? (You may tick more than 1 source)
 - Articles from journals and magazines ()
 - Books ()
 - Previous students' thesis ()
 - Articles from the internet ()
 - Discussion with peer group ()
 - Discussion with lecturers ()
 - Others ()
- (2) How do you acknowledge the source of information in your assignment?
 - quote author's name ()
 - show as footnote ()
 - show in reference list ()
 - do not state anywhere ()
- (3) According to *Student Handbook*, plagiarism is strictly prohibited. In your opinion, which of the following punishments should be imposed on students who are caught plagiarising?
 - Dismiss from the university ()
 - Suspend for one semester ()
 - Bar from sitting the course ()
 - Impose a cash penalty ()

Section B

Personal attitudes, institutional, pressures, availability of internet facilities, lack of awareness and understanding of the concept of plagiarism are some of the factors that may contribute to the level of plagiarism activities among students. Below are questions that may throw some light on the possible reasons for plagiarism activities among accounting undergraduates.

Please respond to the following statements using the scale below. (Please circle the most appropriate response).

Scale:

1: Strongly disagree 2: Disagree 3: Agree 4: Strongly agree.

		Scale			
1	I do not have the confidence to prepare a good assignment	1	2	3	4
2	I am not aware of institutional rules and regulations	1	2	3	4
3	I feel it is not important to acknowledge the original writer	1	2	3	4
4	I do not have the desire to work or learn	1	2	3	4
5	I find it difficult to construct sentences in English	1	2	3	4
6	I feel it is easier to plagiarise because the types of academic assessment given by the lecturers are similar	1	2	3	4
7	I am not afraid of being caught by the lecturer	1	2	3	4
8	I do not understand what constitutes plagiarism	1	2	3	4
9	I do not see plagiarism as a problem	1	2	3	4
10	I found the lecturer reluctant to take action against students who commit plagiarism	1	2	3	4
11	I have poor research skills	1	2	3	4
12	I found the type of assessment allowed me to plagiarise	1	2	3	4
13	I do not see the need for knowledge in the future	1	2	3	4
14	I want to avoid hard work	1	2	3	4
15	I am not interested in the topic	1	2	3	4
16	I am lazy and used to delaying my work	1	2	3	4
17	I never attended any formal course conducted by university or lecturer on plagiarism	1	2	3	4
18	I cannot do well in preparing my assignment	1	2	3	4
19	I do not know the legal implications of plagiarism	1	2	3	4
20	I do not understand the subject matter	1	2	3	4
21	I do not know how to properly acknowledge the author through citation	1	2	3	4
22	My family has high expectations of me to obtain good grades	1	2	3	4
23	I have limited time to finish my work	1	2	3	4
24	I feel pressure to complete many assignments during a given time period	1	2	3	4
25	I have difficulty in understanding articles in English	1	2	3	4
26	I have too many subjects in one particular semester	1	2	3	4
27	I have poor time management skills	1	2	3	4
28	I think that the lecturer could not identify it if I plagiarise	1	2	3	4
29	My lecturer does not know the consequences of plagiarism for the student	1	2	3	4
30	Action taken by the university to punish students who are caught plagiarising is time consuming	1	2	3	4
31	I think that cutting and pasting from the internet and word processing is much easier and faster	1	2	3	4
32	I find it is easy to download articles from web sites	1	2	3	4
33	I find that there is too much information available in electronic format especially from web sites	1	2	3	4

Table AI.
Survey instrument

Section C: demographic. Please tick (/) an appropriate answer.

(1) Gender

Male () Female ()

(2) Semester

1 () 3 () 5 ()

2 () 4 () > 6 ()

(3) 3 CGPA

3.50-4.00 () 2.00 – 2.49 ()

3.00-3.49 () < 2.00 ()

2.50-2.99 ()

Thank you for your cooperation.

Appendix 2.

	Item	Mean score
B1	I do not have the confidence to prepare a good assignment	2.245
B2	I am not aware of institutional rules and regulations	2.031
B3	I feel it is not important to acknowledge the original writer	2.017
B4	I do not have the desire to work or learn	1.619
B5	I find it difficult to construct sentences in English	2.510
B6	I feel it is easier to plagiarise because the types of academic assessment given by the lecturers are similar	2.479
B7	I am not afraid of being caught by the lecturer	1.668
B8	I do not understand what constitutes plagiarism	2.231
B9	I do not see plagiarism as a problem	2.304
B10	I found the lecturer reluctant to take action against students who commit plagiarism	2.395
B11	I have poor research skills	2.339
B12	I found the type of assessment allowed me to plagiarise	2.430
B13	I do not see the need for knowledge in the future	1.661
B14	I want to avoid hard work	1.888
B15	I am not interested in the topic	1.997
B16	I am lazy and used to delaying my work	1.934
B17	I never attended any formal course conducted by university or lecturer on plagiarism	2.301
B18	I cannot do well in preparing my assignment	2.059
B19	I do not know the legal implications of plagiarism	2.406
B20	I do not understand the subject matter	2.189

Table AII.
Mean responses to survey statements

(continued)

	Item	Mean score
B21	I do not know how to properly acknowledge the author through citation	2.332
B22	My family has high expectations of me to obtain good grades	3.189
B23	I have limited time to finish my work	2.889
B24	I feel pressure to complete many assignments during a given time period	2.846
B25	I have difficulty in understanding articles in English	2.451
B26	I have too many subjects in one particular semester	3.004
B27	I have poor time management skills	2.549
B28	I think that the lecturer could not identify if I plagiarise	2.234
B29	My lecturer does not know the consequences of plagiarism for the student	2.105
B30	Action taken by the University to punish students who are caught plagiarising is time consuming	2.535
B31	I think that cutting and pasting from the internet and word processing is much easier and faster	2.965
B32	I found it is easy to download articles from web sites	3.038
B33	I found that there is too much information available in electronic format especially from web sites	3.175

Note: Range 1 (strongly agree) to 4 (strongly disagree)

Table AII.

Appendix 3.

	Item	Gender (C1) (<i>r</i> (<i>p</i>))	CGPA (C3) (<i>r</i> (<i>p</i>))
B1	I do not have the confidence to prepare a good assignment	0.160 (0.007)	0.034 (0.566)
B2	I am not aware of institutional rules and regulations	-0.026 (0.659)	-0.058 (0.330)
B3	I feel it is not important to acknowledge the original writer	-0.100(0.092)	-0.079(0.181)
B4	I do not have the desire to work or learn	0.111 (0.061)	0.063 (0.286)
B5	I find it difficult to construct sentences in English	0.103 (0.083)	0.058 (0.331)
B6	I feel it is easier to plagiarise because the types of academic assessment given by the lecturers are similar	0.005 (0.928)	-0.101 (0.089)
B7	I am not afraid of being caught by the lecturer	-0.040 (0.496)	0.016 (0.785)
B8	I do not understand what constitutes plagiarism	-0.037 (0.529)	-0.043 (0.465)
B9	I do not see plagiarism as a problem	-0.084 (0.158)	-0.047 (0.427)
B10	I found the lecturer reluctant to take action against students who commit plagiarism	0.068 (0.250)	-0.120 (0.042)
B11	I have poor research skills.	0.183 (0.002)	0.072 (0.227)
B12.	I found the type of assessment allowed me to plagiarise	0.019 (0.750)	-0.062 (0.299)
B13	I do not see the need for knowledge in the future	0.049 (0.410)	0.002 (0.970)
B14	I want to avoid hard work	-0.004 (0.944)	0.047 (0.429)

(continued)

Table AIII.
Relationships with
gender and academic
performance

Item	Gender (C1) (<i>r</i> (<i>p</i>))	CGPA (C3) (<i>r</i> (<i>p</i>))
B15 I am not interested in the topic	0.095 (0.110)	0.035 (0.555)
B16 I am lazy and used to delaying my work	-0.004 (0.944)	0.045 (0.451)
B17 I never attended any formal course conducted by university or lecturer on plagiarism	-0.060 (0.314)	-0.061 (0.304)
B18 I cannot do well in preparing my assignment	-0.025 (0.672)	0.039 (0.515)
B19 I do not know the legal implications of plagiarism	-0.068 (0.252)	-0.028 (0.635)
B20 I do not understand the subject matter	0.032 (0.588)	0.036 (0.541)
B21 I do not know how to properly acknowledge the author through citation	-0.036 (0.547)	-0.120 (0.042)
B22 My family has high expectations of me to obtain good grades	-0.022 (0.707)	-0.056 (0.349)
B23 I have limited time to finish my work	-0.052 (0.382)	-0.049 (0.411)
B24 I feel pressure to complete many assignments during a given time period	-0.001 (0.993)	-0.073 (0.217)
B25 I have difficulty in understanding articles in English	0.124 (0.037)	0.141 (0.017)
B26 I have too many subjects in one particular semester	-0.027 (0.654)	-0.046 (0.441)
B27 I have poor time management skills	0.102 (0.085)	0.081 (0.172)
B28 I think that the lecturer could not identify it if I plagiarise	0.044 (0.455)	-0.065 (0.270)
B29 My lecturer does not know the consequences of plagiarism for the student	0.012 (0.841)	0.052 (0.382)
B30. Action taken by the university to punish students who are caught plagiarising is time consuming	0.029 (0.626)	0.046 (0.440)
B31 I think that cutting and pasting from the internet and word processing is much easier and faster	0.015 (0.799)	0.005 (0.935)
B32 I found it is easy to download articles from web sites	-0.041 (0.490)	0.047 (0.427)
B33 I found that there is too much information available in electronic format especially from web sites	-0.095 (0.109)	0.017 (0.770)

Note: Spearman correlation coefficients (ρ) with significance levels in parentheses. Italicised items are significant at the 5 per cent level

Table AIII.

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