

Academic dishonesty in higher education—a nationwide study in Taiwan

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Abstract Academic dishonesty has been an important issue. However, only few researches had been done in Asian countries, especially a nationwide study. A sample of 2,068 college students throughout Taiwan was selected and surveyed on four domains of academic dishonesty, including: cheating on test, cheating on assignment, plagiarism, and falsifying documents. The major findings of this study were: (1) the prevalence rate for all types of dishonesty behaviors among college students in Taiwan was 61.72%; (2) the top five most practiced academic dishonesty behaviors in Taiwan are provided paper or assignment for another student, gave prohibited help to others on their assignment, copied others' assignments, passed answers to other students, and copied from other students; (3) students' attitudes correlated with behaviors in all four domains of academic dishonesty; (4) females reported less acceptable to and behaved less academic dishonesty behaviors than males; and (5) freshmen had more dishonest practices than other class ranks.

Keywords Academic dishonesty · Colleges and universities · Higher education · Cheating · Plagiarism · Taiwan

Introduction

Academic dishonesty has been an important and ongoing issue in higher education. It has been studied in many different countries, such as the United States, United Kingdom, Canada, Japan, New Zealand and others. However, only few researches were studied in Asia. It is important to start investigating this issue in Asian countries

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for two reasons. First, Asian countries have been becoming one of the major players in world economy. Their college students will soon playing effective roles in the workforce. Their ethical perceptions and behaviors during college education could be carried to their future careers. Therefore, it is essential to start studying the perceptions and behaviors of these college students on the issue of academic dishonesty. Second, Asian students have been major foreign students in many western countries, such as the United States and the United Kingdom. Therefore, it is also eminent for these countries' educators to be aware of the academic dishonesty behaviors of their foreign prospective students.

Taiwan has been one of the major economic players in the Asian and the world economy. It also provides major source for foreign students in the United States and the United Kingdom. Every year, more than 10,000 and 9,000 students from Taiwan study in the United States and the United Kingdom, respectively. According to the official data from the Ministry of Education in Taiwan (2004), 32,525 students applied for student visa to study abroad in year 2004, which ranked the sixth country in the number of foreign students in the United States.

The society in Taiwan has been changed quite differently in the past decade. Not only the social and economic structures have been changed, the education policies have also been reformed. All of these could have great influence on social values that would further affect students' academic behaviors. Academic dishonesty has been discussed constantly by school faculties, where most of them have been witnessing the dishonesty behaviors in their professional lives. Nonetheless, there is no researches on exactly how serious is this issue of academic dishonesty in higher education in Taiwan. This is the motivation of this study to find out the prevalence rates of academic dishonesty in higher education, and the types of academic dishonesty. Thus this study, which investigated the academic dishonesty behaviors across students in different institutions of higher education in Taiwan, made an important contribution to the extant literature.

The purposes of this study were: (1) to investigate the prevalence rates of different types of academic dishonest behaviors in Taiwan's higher education as perceived by students; (2) to explore the relationship between students' attitudes and their academic dishonesty behaviors; and (3) to exam the perceptions and behaviors differences of college students on different background variables.

It is important to find out the severity of the academic dishonesty problem in higher education, since college students are the future major workforces and leaders in the society. Their unethical behaviors now would be problems for work place or even the whole society in the future. People have been witnessing the catastrophic influence of unethical behaviors of individuals or companies, such as in the case of Enron, and WorldCom.

Literature review

Academic dishonesty is a serious problem not only in the United States, but also in many countries. Academic cheating is recognized as a highly prevalent and ongoing problem at all grade level (Finn & Frone, 2004). It is an issue that has garnished attention and it is considered a serious problem among college students (Crown & Spiller, 1998; McCabe & Trevino, 1996). According to Lupton and Chapman's study (2000), about 55% of the United States students reported that they had cheated

during their college lives. Forty-seven percent of Georgia Southern students have committed some type of academic dishonesty (Pino & Smith, 2003). Smyth and Davis's study (2004) on 2-year college students reported a 46% of the students surveyed had cheated at least once in their college lives. In addition, Whitley, Nelson, and Jones (1999) reviewed 107 studies related to cheating among college students and found an average of 70.4% of students had cheated, 43.1% had cheated on examinations, 40.9% had cheated on homework assignments, and 47% had plagiarized. Davis, Grover, Becker, and McGregor (1992) indicated that approximately 80% of the cheaters copied from a nearby paper or used crib notes. Almost 60% of the students identified crib notes as the most common way of cheating (Chang, 1995). A recent study by West, Ravenscroft, and Shrader (2004), in a rare natural experiment had found 74% of the students cheated on a take-home test. Furthermore, Brown and Choong (2005) compared academic dishonest among business at public and private universities in the U.S. had found that 95.9% of private university students and 96.7% of public university students had admitted participation in at least one of the dishonesty practices.

In countries other than the United States, the rates of dishonesty behaviors among college students were similar. Among Russian students, 69% of the Russian students majored in business reported having cheated (Lupton & Chapman, 2002). Grimes (2004), studied undergraduate students from eight Eastern European countries and former Soviet Republics in Central Asia, a near 76% of the students reported that they had personally cheated while in colleges. Nearly 84% of the Polish students reported having cheated in their college education (Lupton, Chapman, & Weiss, 2000). This high prevalence rate of cheating also occurs in Asian countries. For Japanese students, 55.4% of college students reported to cheat on test (Diekhoff, LaBeff, Shinohara, & Yusukawa, 1999). According to Shen's (1995) study, 85% of the subjects cheated on examinations, on junior colleges in southern Taiwan. Chang's (1995) study on students in a Taiwan public university also showed high prevalence in cheating.

The attitudes of students on academic dishonesty have been studied extensively. Bernardi, Metzger, Bruno, Hoogkamp, Reyes, and Barnaby's (2004) study indicated a highly significant association among students' attitudes on cheating, academic integrity, and academic dishonesty/honesty. Students' attitudes toward cheating provide better explanation of cheating behaviors than background information. Researches show that there are international differences on students' attitudes about academic dishonesty. Attitudes toward cheating differed considerably among Russia, the Netherlands, Israel, and the United States (Magnus, Polterovich, Danilov, & Savvateev, 2002). Not all cheating behaviors are viewed alike (Pincus & Schmelkin, 2003). In Lupton et al.'s study (2000), comparing cheating of American and Polish students, the American students did not believe that giving someone past exams or using exams from a prior semester was cheating, whereas the Polish students tended to feel the giving or use of prior exams was cheating. De Lambert, Ellen, and Taylor's comparison of different ethnic group students in New Zealand (2003), Asian students viewed the scenarios in the study as not examples of cheating in every case, while compared to European and New Zealand.

Individual student characteristics that appeared to influence the likelihood of cheating included the student's grade in the class, the student's major, and the student's work schedule. Many studies show that grade negatively related to cheating (Nowell & Laufer, 1997). According to Nowell and Laufer (1997), adjunct

instructors and class size are both positively correlated with cheating. The percentage of men and women at small, private liberal arts colleges who reported having cheated in college were significantly lower than those reported by their counterparts at larger state and private institutions (Davis et al., 1992). Individuals who believe dishonest acts to be acceptable will engage in dishonest acts more frequently than those who believe dishonest acts to be less acceptable (Nonis & Swift, 2001).

Gender difference in academic dishonesty is still inconclusive. Females consistently report lower cheating rates than males did in colleges (Davis et al., 1992; Smyth & Davis, 2004; Brown & Choong, 2005). Males would report having cheated more than females and that males would have more positive attitudes toward cheating than females (Whitley et al., 1999). Males also tended to report using more fraudulent excuse than females (Roig & Caso, 2005). On the other hand, according to Crown and Spiller's review (1998) of empirical research on collegiate cheating, studies published after 1982 did not find significant gender differences. Roig and Caso (2005), also reported no significant difference in plagiarism between genders.

Lupton and Chapman (2002) had pointed out that cheating behaviors may lead to inequitable grades and a misrepresentation of what a student may actually have learned and can use after graduation. Success cheating behaviors in college may carry over as a way of life after college. Sims's study (1993) showed that there is a positive relationship between the level of dishonesty students admitted to and the level of dishonesty they engaged in at work. Lawson (2004) also identified this strong relationship between students' propensity to engage in unethical behaviors in an academic setting and their attitudes toward such behaviors in the business world.

Many of the previous researches were only concentrated on the cheating behaviors of college students, which were only a part of students academic dishonesty. Roig and Caso (2005) investigated fraudulent excuse making, and had reported that a 72% of the students using a fraudulent excuse at least once in college.

The range of academically dishonest behaviors definitely extends beyond cheating on examinations; however, less attention has been focused on other forms of dishonesty. This study would attempt to investigate different domains of academic dishonesty, which are cheating on tests, cheating on assignments, plagiarism, and other dishonesty behaviors.

Research method

This study was designed using a student self-report survey questionnaire. Student self-report is the most common method for assessing cheating and has been shown to provide reasonably accurate estimates (Cizek, 1999, cited in Finn & Frone, 2004). Contacts were made with teachers in selected colleges and universities throughout Taiwan to request for their assistance in distributions of questionnaires. Two thousand and sixty-eight (94%) usable survey questionnaires were returned. The questionnaires were administered in classes during students' regularly schedule class times. Given the sensitive nature of the questions, respondents were repeatedly told, orally and in writing, that their responses would be anonymous and confidential. The survey questionnaire included two sections. The first part consisted of demographic information questions. The second part comprised of the students' views on their behaviors toward academic dishonesty.

In this study, academic dishonesty was operationally defined as: any behavior, in the student's learning process, that violate the principles of justice and fairness, in order to achieve the goal of getting higher grade or some specific credential, for example, cheating on tests, copy assignments, and plagiarism. This study measured academic dishonesty through 17 items adapted from a variety of previous studies (Sims, 1993; Chang, 1995; De Lambert et al., 2003; Pincus & Shcnelkin, 2003). These 17 items represented four areas of academic dishonesty: cheating on tests, cheating on assignments, plagiarism, and others. Students were asked about their attitudes and behaviors in these items.

The survey questionnaire was reviewed by ten experts from different areas related to higher education. The experts reviewed the items to confirm the content validity and to determine whether the items were clearly worded, were comprehensive, and were not redundant. The questionnaire consisted of statements describing different academic dishonest behaviors. The subjects were asked to check on a five-point Likert scale on their attitudes on acceptance and engagement of these behaviors. The survey referred to college behaviors only.

A pretest of 62 students was done. Internal consistency reliability was assessed with Chronbach's alpha coefficients. The Chronbach's alpha for the final version was .8656. The questionnaire has proven to be internally consistent and reliable.

Results

The demographic information of the 2,068 college students surveyed are as followed. Thirty-two percent of the students surveyed were male and 67.8% were female. One thousand eight hundred and nineteen (87.3%) students were studying in private schools and 264 (12.7%) were in public schools. About 43% were freshman, 30.7% were sophomores, 24.1% were juniors, and 2.5% were seniors.

Table 1 shows the prevalence rate of college students' academic dishonest behaviors in Taiwan. The percentage of students who self-reported that they have "never" engaged in any form of academic dishonesty was 38.2%. Conversely, 61.7% have participated academic dishonesty one or more times in their college lives. The top five most academic dishonest practice of college students in Taiwan are: provided paper or assignment for another student, gave prohibited help to others on their assignment, copied others' assignments, passed answers to other students, and copied from other students.

Concerning with cheating on test, about 85% percent of the students in the study ($n = 315$) reported that they have copied from other students during a test more than once. About 10% ($n = 201$) indicated that they have often copied from other students during a test. Twenty-one percent ($n = 432$) indicted that they have never passed answers to other students during a test. Thirteen percent ($n = 273$) mentioned that they have often passed answers to other students during a test. Twenty-eight percent ($n = 578$) said they have never used prohibited crib notes during a test, where about 12% ($n = 242$) indicated that they have often used prohibited crib notes during a test. Sixty-five percent ($n = 1,362$) indicated that they have never obtained the test questions illegally before a test. Additionally, about 5% ($n = 94$) of the students surveyed mentioned that they often obtained the test questions illegally before a test. Eighty-two percent students said they have never used unauthorized electronic equipments during a test, where 2% ($n = 42$) said they often did.

Table 1 Prevalence rate of academic dishonest behaviors

Academic dishonest behaviors	Never do (1)	(2)	(3)	(4)	Almost every time (5)	Mean	SD	Rank
<i>Cheating on test</i>								
Copied from other students	15.2% (315)	37.6% (781)	37.6% (781)	7.0% (146)	2.6% (55)	2.4442	.9218	5
Passed answers to other students	20.8% (432)	29.1% (604)	36.9% (765)	11.1% (230)	2.1% (43)	2.4674	1.5299	4
Used prohibited crib notes	27.9% (578)	32.6% (675)	27.8% (576)	9.1% (188)	2.6% (54)	2.2585	1.0438	7
Obtained the test questions illegally	65.6% (1363)	17.5% (363)	12.4% (257)	3.3% (69)	1.2% (25)	1.5692	.9154	12
Used unauthorized electronic equipments	83.2% (1723)	7.4% (154)	7.2% (149)	1.4% (30)	6% (12)	1.2841	.7118	15
<i>Cheating on assignments</i>								
Copied others' assignments	21.8% (452)	26.7% (554)	34.2% (710)	13.1% (272)	4.1% (86)	2.5150	1.1126	3
Worked on assignment with others when asked for individual work	44.7% (928)	25.7% (534)	22.1% (459)	5.4% (112)	1% (43)	1.9440	1.0336	10
Provided paper or assignment for another student	12.4% (256)	23.8% (494)	40.6% (842)	18.0% (373)	5.2% (107)	2.7971	1.0388	1
Gave forbidden help to others on their assignments	20.9% (433)	26% (539)	36.1% (749)	13.7% (283)	3.3% (69)	2.5266	1.0684	2
Did less of your share of work in group project	48.8% (1011)	28.8% (597)	17.5% (363)	4.0% (82)	9% (18)	1.7939	.9262	11
<i>Plagiarism</i>								
Fabricated a bibliography	44.4% (922)	25.3% (526)	21.0% (436)	6.3% (131)	2.9% (61)	1.9822	1.0959	9
Copied materials without footnoting them	26.3% (546)	30.5% (633)	29.0% (601)	10.5% (218)	3.7% (76)	2.3475	1.0887	6
Referenced materials without truly reading them	31.1% (647)	27.1% (564)	28.1% (583)	9.9% (205)	3.8% (79)	2.2794	1.1194	8
<i>Others</i>								
Falsified graded scores	79.5% (1654)	11.4% (237)	6.9% (143)	1.9% (39)	.3% (7)	1.3252	.7536	14
Changed test or assignment answers after given grade score	68.3% (1418)	18.6% (386)	10.4% (216)	2.3% (48)	4% (9)	1.4807	.8055	13
Falsified school documents (i.e. parking permit, certificate)	87.7% (1813)	5.7% (118)	5.1 (106)	1.1 (23)	4% (8)	1.2073	.6164	17
Fraudulent excuse making to postpone exams or assignments	85.1% (1760)	7.4% (154)	5.9% (123)	1.1% (23)	4% (8)	1.2404	.6438	16

About cheating on paper and work assignment, more than one-fifth (28.1%) of the surveyed students indicated that they have never copied other's papers or assignments, and yet 17.2% ($n = 358$) said they often did. About 12% ($n = 256$) of the students surveyed mentioned that they have never provided papers or assignments for another student. In addition, 23.2% ($n = 480$) said they often did. About 21% ($n = 433$) indicated that they have never given forbidden help to others on assignments, with 27% ($n = 352$) mentioned they often did. Concerning sharing work in group project, 48.8% said they have never done less than their share in group project.

In the area relating to plagiarism, 44.4% ($n = 922$) of the surveyed students said they have never fabricated a bibliography, where 9.2% said they often did. About 26% ($n = 456$) indicated that they have never copied materials without footnoting them. However, 14.2% ($n = 294$) said they often did. Almost one-third (31%) of the students indicated that they have never referred materials without truly reading them, where about 13.7% ($n = 284$) said they often did.

With other types of academic dishonesty, close to 80% ($n = 1,654$) of the students indicated that they have never falsified grade scores, where 2.2% (46) indicated that they often did. Nearly 70% ($n = 1,418$) mentioned that they have never changed test or assignment answers after a grade score was given, and 2.7% ($n = 57$) said they often did. Majority (87.7%) of the students reported had never falsified school documents. In addition, 85.1% said they had never given fraudulent excuse to postpone test or assignments.

The relationship among students' attitudes and behaviors in academic dishonesty was tested by Pearson correlation. From Table 2, it is clear that students' attitudes were highly related to their behaviors. Students who were more acceptable to academic dishonesty also tend to be people who behave dishonestly in their academic learning.

Table 3 displays t -test for investigations of the gender differences. Male and female students show small and yet significant differences in all academic dishonesty practices, both in attitudes and behaviors. Males reported to have more academically dishonest practices and more agreeable to these practices.

Table 4 shows results of t -test for behavior differences in school type, private versus public schools. The results show no significant differences between private and public school students in academic dishonesty practices both in attitudes and behaviors, except in cheating on test. Private school students indicated more agreeable to dishonest practices, and reported to participate more in these practices.

One-way ANOVA analysis was done to test the differences among class rank. Interestingly, freshmen showed to have more academically dishonest behaviors in

Table 2 The relationship between attitudes and behaviors

Academic dishonest behaviors	Attitudes		Behaviors		t
	Mean	SD	Mean	SD	
Cheating on test	23.42	7.37	19.27	5.53	.559*
Cheating on work assignments	21.09	6.99	18.36	5.62	.679*
Plagiarism	15.47	5.89	1.024	5.45	.713*
Others	8.67	4.06	7.55	3.15	.666*

* $p < .01$

Table 3 Gender differences in attitudes and behaviors of academic dishonesty

Academic dishonest behaviors	Attitudes					Behaviors				
	Male		Female		<i>t</i>	Male		Female		<i>t</i>
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Cheating on test	25.5	8.28	22.43	6.68	8.30*	20.51	5.99	18.69	5.21	6.98*
Cheating on work assignments	22.63	7.85	20.34	6.41	6.55*	19.43	6.16	17.85	5.27	5.94*
Plagiarism	16.32	6.37	15.06	5.60	4.40*	14.73	5.75	13.68	5.27	4.11*
Others	9.25	4.58	8.40	3.76	4.15*	7.88	3.42	7.40	2.99	3.24*

p* < .001Table 4** School type differences in attitudes and behaviors of academic dishonesty

Academic dishonest behaviors	Attitudes					Behaviors				
	Public		Private		<i>t</i>	Public		Private		<i>t</i>
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Cheating on test	21.77	6.86	23.67	7.42	-4.13*	17.03	4.55	19.6	5.59	-8.22*
Cheating on work assignments	21.37	6.36	21.05	7.08	.75	17.99	5.26	18.42	5.67	-1.14
Plagiarism	15.47	5.40	15.46	5.95	.02	14.07	5.15	14.01	5.50	.17
Others	8.26	3.43	8.74	4.14	-1.76	7.41	2.98	7.57	3.17	-0.78

**p* < .001

these areas: used prohibited electronic equipments, copied others' assignments, worked with others when prohibited, provided paper or assignment to other students, falsified grade score, and changed test or assignment answers after given grade score (Table 5).

Discussion

This research studied four areas of academic dishonesty, including cheating on tests, cheating on assignments, plagiarism, and others. In the area of cheating on test, the rate of Taiwan's college students is 57.5%, which is higher than 43.1% in Whitley et al.'s study (1998). Comparing to another Asian country, this rate is approximately to Japanese students. Diekhoff et al. (1999) studied Japanese college students had founded 55.4% of students cheated on test. For copying homework or assignments, the mean rate of academic dishonesty is 70.3% in this study. This is much higher than 40.9% in Whitley's study (1998). Concerning plagiarism, the mean rate is 66.1% in this study, where Whitley (1998) reported 47% on plagiarism across 107 studies.

The reasons for these rates differences could be cultural. De Lambert et al.'s study (2003) found that Asian students viewed the scenarios in the research as not examples of cheating in every case, when compared to European and New Zealand's students. As pointed out in the same study, "students just don't know what constitute academic dishonesty" (De Lambert et al., 2003). Taiwanese society is similar to other Asian countries that it is a society focus on group work rather individualism.

Table 5 Academic dishonesty behaviors with significant differences on class rank

Dishonesty practices	Year	<i>n</i>	Mean	SD	LSD	F	<i>p</i> -value
Used prohibited electronic equipments	Freshmen	886	1.8883	1.1517	1 > 2, 3	3.237	.021*
	Sophomore	635	1.8016	1.1667			
	Junior	503	1.7475	1.0495			
Copied others' assignments	Senior	52	1.5000	.8284	1 > 2	4.227	.005*
	Freshmen	888	2.8986	1.1904			
	Sophomore	638	2.6818	1.2431			
Worked on assignments with others when asked for individual work	Junior	502	2.7869	1.1600	1 > 2, 3	4.491	.004*
	Senior	53	2.9057	1.0789			
	Freshmen	886	2.6219	1.2407			
Provided paper or assignment for other students	Sophomore	639	2.4006	1.2390	1 > 2	3.349	.018*
	Junior	501	2.4451	1.2615			
	Senior	53	2.4906	1.2029			
Falsified grade scores	Freshmen	888	3.0676	1.1227	1 > 2, 3	6.106	.000*
	Sophomore	638	2.8840	1.1696			
	Junior	502	2.9960	1.1495			
Changed test or assignment answers	Senior	53	2.8868	1.0314	1 > 3, 4	5.987	.000*
	Freshmen	889	1.5624	.9484			
	Sophomore	638	1.4279	.8932			
Changed test or assignment answers	Junior	503	1.3678	.7561	1 > 3, 4	5.987	.000*
	Senior	53	1.3774	.9246			
	Freshmen	889	1.7244	1.0198			
Changed test or assignment answers	Sophomore	638	1.6552	1.3070	1 > 3, 4	5.987	.000*
	Junior	503	1.4891	.8129			
	Senior	53	1.4151	.9080			

**p* < .05

The high prevalence rate of academic dishonesty maybe due to social environment that promote team and group orientation, therefore, the social pressure to cheat or assist others in cheating maybe too much for many Taiwanese students to resist. This study result of ranking the academic dishonest practices also showed this kind of social pressure to assist other in cheating, both in examinations and assignments. Three out of five of the top five dishonest practices in this study subjects are to assist other students in examinations and assignments. These are provided paper or assignment for other students, gave prohibited help to others, and passed answers to other students.

From ranking the academic dishonest practices, this study result provides a shocking fact that cheating on assignments was the top three most practiced academic dishonest behaviors. Most researches have been focusing on cheating on examinations, that investigations on cheating on assignments have been limited. This study result provides evidence that cheating on assignments should not be ignored in the study of academic dishonesty.

Previous studies on gender differences showed mixing information. Both Davis et al. (1992) and Whitley et al. (1999) reported that females stated lower cheating behaviors than males. However, when Crown and Spiller (1998) empirically reviewed studies published after 1982 did not find significant gender differences. The results of gender differences in this study show that male college students were more acceptable and had more academic dishonesty behaviors than their female counterparts. Interestingly, these differences were consistent across all four domains of academic dishonesty attitudes and behaviors. This consistence in attitudes and behaviors differences between males and females could provide some evidence that they are truly different in view of academic dishonesty. One explanation of this gender differences among college students in Taiwan could be culture. These results do comprehended with the traditional Chinese culture that women are strongly bounded to be honest. Traditionally, dishonored Chinese women would be shamed throughout their lives and living in isolation.

When comparing the public and private school students, their attitudes and behaviors were all similar, except in cheating on test. Public schools students were less acceptable and perform less academic dishonesty behaviors than private school students did. Unlike many Western countries, in Taiwan, public schools are considered much better than private schools. They are usually performing better in ranking and getting more grants and aids from government. Therefore, students with better academic performance tend to choose public schools as their first choice of college education. Hence, it could be explained that these students in public schools are better academic performers that they tend to not accept and behave in cheating on test. The similarity of public and private school students in cheating on assignments, plagiarism and other types of dishonest practices show that academic dishonesty problem is a major problem of this generation, regardless of school types.

One interesting and alarming finding of this research is that when comparing the differences in class rank, freshmen show to report more dishonest acts in some areas. They reported to use more prohibited electronic equipments, copied others' assignments, worked with others when prohibited, provided paper or assignment to other students, falsified grade score, and changed test or assignment answers after grade scores were given. McCabe, Trevino, and Butterfield (2001a, b), had also shown that younger students tend to cheat more than older students.

Freshmen are new members to the college community. At the time of this study survey, they had only spent a semester in college, and yet they had already reported to perform more dishonest practices than the rest of the class rank. This result raised an alarming question. If academic dishonesty is popularly accepted and practices among freshmen in colleges, could it be that they have been cheated before, in their high school or even previous school lives? Therefore, the problem of academic dishonesty in higher education is an extended problem in our education system. If that is the issue, then the examination of academic dishonesty needs to go beyond levels of education.

This result also provides some important information to higher education faculty. We are facing with students who are more acceptable and act more dishonest practices, that faculty in higher education could no longer keep their hands off the problem. McCabe et al. (2001a, b) had reported those faculties are reluctant to report cheating. In addition, students also perceive that many faculties do not treat cases of academic dishonesty very harshly. This unserious attitude of faculty could definitely exacerbate the problem of academic dishonesty in higher education.

Conclusions and recommendations

More than 2,000 college students in Taiwan were queried about their participation in academic dishonesty. The questionnaire was adapted from a variety of previous studies, including four domains: cheating on examination, cheating on homework or assignment, plagiarism, and other types of dishonest practices.

The major findings of this study were: (1) the prevalence rate for all types of dishonesty behaviors among college students in Taiwan was 61.72%; (2) the top five most practiced academic dishonesty in Taiwan are provided paper or assignment for another student, gave prohibited help to others on their assignment, copied others' assignments, passed answers to other students, and copied from other students; (3) students' attitudes correlated with behaviors in all four domains of academic dishonesty; (4) females reported less acceptable to and behaved less academic dishonesty behaviors than males; and (5) freshmen had more dishonest practices than other class ranks.

Some limitations of the study should be addressed. First, this study was limited to the convenient sampling methods. The study subjects are limited to the schools and classes that could cooperate with the study. Therefore, the generalization of the study results should be considered. However, this problem was overcome by the large sample of students across Taiwan. Using the statistical sampling equation with 95% confidence interval and 2.2% of sampling error, the sampling size needed for this national survey was 1,984 students. The research sample of 2,068 was much higher than the calculated number (1,984). Therefore, there is reasonable to assume that the sample is representative of college students in Taiwan. Second, the measurement of academic dishonesty is through the perception of students' self-report. Therefore, problems relating to self-report perception should be considered.

Future researches should consider the distributions of subjects from different areas of Taiwan to be truly corresponding to the real student population distribution. Also, more sophisticated analysis methods, such as factorial or regression analysis,

should be implemented to further provide more detailed and in depth information about academic dishonesty in higher education in Taiwan.

The results in this study are important because they reflect the current situation concerning to academic dishonesty in higher education in Taiwan. Like many countries overseas, the problem of higher prevalence rate of academic dishonesty among college students is severe. This is a concern that needed to overcome, for college students are the future major workforces in the society. Their unethical behaviors now would be problems for work place in the future. According to Nonis and Swift (2001), “students who engaged in dishonest behavior in their college classes were more likely to engage in dishonest behavior on the job.” The findings of this study have important implications for future research and policy options geared toward reducing academic dishonesty in higher education.

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