

Identifying The Salient Dimensions Of Student Cheating And Their Key Determinants In A Private University

Bob S. Brown, (E-mail: brownbs@marshall.edu), Marshall University Graduate College
Peggy Choong, (E-mail: PMC@niagara.edu), Niagara University

Abstract

Extensive research has been conducted over the years about the academic dishonesty or cheating among university students. Most of these studies usually involve surveys of students to determine the extent of their participation in unethical practices, reasons for their participation in these practices and how each unethical academic behavior is related to some student characteristics. While that approach offers good insights it fails to uncover the underlying salient dimensions or commonalties among these behaviors and motivations.

This paper reports the results of a survey of business students concerning their academic honesty. Student self-reports on participation and reasons for participating in unethical practices are factor analyzed to uncover three salient dimensions of cheating and four compelling motivations for student cheating. Key determinants of the various forms of cheating are identified and policy implications are discussed.

1. Introduction

*A*cademic dishonesty of university students has been the focus of much research for decades. Most of these studies utilize surveys of students to determine the extent of their participation, attitudes toward these unethical practices and how individual characteristics are related to participation or attitudes.

The literature has consistently found relatively high levels of cheating among college students (Baird, 1980; Singhal, 1982; Sisson and Todd-McMancillas, 1984; Tom and Borin, 1988; Green and Saxe, 1992; Meade, 1992; Sims, 1993; Brown and Abramson, 1999; Brown and McInerney, 2001). Studies have also investigated the relationship between cheating behavior and individual characteristics. For example, findings in the literature consistently indicate that cheating is related to GPA (Graham et al., 1994; Genereux and McLeod, 1995) Less consistent results have been obtained for gender. Several studies have found that males are more likely to engage in unethical practices (Karlins, Michaels, Freilinger and Walker, 1989; Davis and Ludvigson, 1995; Genereux and McLeod, 1995) while others report no gender difference in this area (Stern and Havleck, 1985; Brown, 1995; Allmon, Page and Roberts, 2000) A meta-analysis conducted by Athanasou and Olasehinde (2002) revealed very small gender differences. The effect size was extremely low.

In the area of reasons for engaging in dishonest academic behavior, the literature have generally found that the dominant reasons for participating in these behaviors are to obtain a high grade and inadequate study time (Meade, 1992; Graham, et al., 1994; Brown, 1995; Davis and Ludvigson, 1995).

Readers with comments or questions are encouraged to contact the author via email.

While the literature offers good insights into the relationship between various specific acts of cheating and individual characteristics as well as into specific reasons for engaging in these deviant behaviors, it has generally

omitted to uncover the underlying salient dimensions or commonalities among these behaviors and motivations. A few studies have worked in parts of this area. For example, Calabrese and Cochran (1990) identified nine types of dishonesty in their principal components factor analysis of eighteen different acts of cheating. However, this study focused solely on secondary school instead of university students. Rawwas and Isakson (2000) identified eight dimensions of attitudes toward cheating. They used twenty-four behaviors of academic dishonesty and asked students to indicate their approval of each item using a Likert scale. These were factor analyzed and varimax rotation was performed on the results. Though this study pertains to university students, its focus was on attitudes as opposed to the practice of academic dishonesty and their motivating factors. Hollinger and Lanza-Kaduce (1996) used ten different cheating behaviors and a scale of 0 to 9 indicating "never" and "9 or more times" respectively. Factor analysis of the data resulted in four dimensions of cheating. However, the focus of analysis of this paper was on how effective counter measures were perceived by cheaters and non-cheaters.

The purpose of this paper, therefore, is to uncover the salient dimensions of cheating and the key determinants of these dimensions. It will also identify the compelling dimensions of motivations for cheating and demonstrate their relationship to participating in the various dimensions of cheating. Since cheating is undoubtedly a critical educational problem that devalues assessment and student learning, policy implications will also be discussed.

2. Methodology

The sixteen unethical academic practices included in the survey were selected based on a review of current literature. Respondents were asked to indicate their extent of participation in each of these practices on a six-point Likert scale. Similarly, the twelve reasons why students might engage in unethical academic practices were also taken from the current literature. Respondents were asked to rate on a five-point scale the likelihood that each of these reasons was the impetus for a student's unethical behavior.

The sample consists of 452 undergraduate students in business classes at a private, Catholic university in the northeast. Each questionnaire was placed in an unmarked envelope. Completed questionnaires were replaced in these envelopes and sealed by the students. The questionnaires were voluntarily completed during class time. Students who declined to participate were encouraged to engage in other reading or writing activities. Respondents were assured that their responses were confidential and anonymous.

The average age of the respondents was 22. They were almost evenly distributed in terms of class, at 20.5% freshman, 22.6% sophomores, 28.7% juniors and 28.2% seniors. About 80% of the respondents were full time students and nearly half (45.8%) worked less than 20 hours a week.

3. Results

3.1 Identifying the Salient Dimensions of Academic Dishonesty

The underlying dimensions of academic dishonesty are uncovered by factor analyzing the sixteen dishonest practices. Factor analysis is a procedure for summarizing the information ratings on the sixteen practices into a smaller number of dimensions, which can then be identified as the dimensions underlying the respondents' ratings. It is in this way that the commonalities in responses are effectively discerned. The analysis extracted factors that had eigenvalues more than one. Three factors were extracted using this criterion. The results of the factor analysis, after applying the varimax rotation procedure are summarized in Table 1.

The first factor relates to obvious and overt acts of cheating directly related to test taking and plagiarism, such as blatantly passing answers during an exam, copying off another student's exam or bringing unauthorized information into an exam situation. These practices pertain to common and obvious acts of unconscionable academic behavior and this dimension is therefore labeled Flagrant Cheating.

The second factor pertains to the unprincipled sharing of examination information in the form of either asking about the content of an examination from someone who has taken it or giving information about the content of an examination to someone who has yet to take it. This dimension is, therefore, labeled Collusion.

The third factor pertains to the more subtle practices of deceit. These include working with others on an individual project, using a false excuse to delay taking an examination or turning in a paper, visiting a professor to influence a grade and taking credit for work without putting in a fair share of work. This dimension is therefore labeled Insidious Cheating.

Table 1: Factor Analysis Results of Frequency of Practice

Variable	Factor 1	Factor 2	Factor 3
Copying off another student's exam	0.802	0.207	0.139
Passing answers during an exam	0.798	0.088	0.205
Allowing another student to see one's own answers during an exam	0.722	0.271	0.104
Using unauthorized crib notes	0.678	0.076	0.301
Turning in work done by someone else as one's own	0.657	0.238	0.221
Before taking an exam, looking at a copy that was not suppose to be available	0.536	0.435	0.127
Having unauthorized information programmed into a calculator when taking an exam	0.464	0.401	0.201
Asking about the content of an exam from someone who has taken it	0.209	0.884	0.146
Giving information about the content of an exam to someone who has yet to take it	0.273	0.854	0.174
Without the permission of the instructor, having someone check over a paper	-0.180	0.410	0.635
Working with other students on an individual paper or project	0.175	0.032	0.617
Visiting a professor in his/her office to influence a grade	0.224	0.203	0.598
Using a false excuse to delay taking an exam or turning in a paper	0.414	-0.007	0.583
Taking credit for full participation in a group project without putting in a fair share	0.430	0.197	0.496
Citing sources in a bibliography that were not read or used	0.328	0.422	0.467
Factor Labels	Flagrant Cheating	Collusion Cheating	Insidious

4. Identifying Salient Dimensions of Reasons for Dishonesty

To discern the underlying commonalty among the twelve reasons cited for academic dishonesty, factor analysis was applied to their likelihood ratings. The analysis extracted factors that had eigenvalues more than one. Four factors were extracted using this criterion. The results of the factor analysis after applying the varimax rotation procedure are summarized in Table 2.

The first factor relates to students safeguarding their self-interest, attempting to benefit themselves by obtain a higher grade without putting in the requisite effort in the belief that this behavior harms no one. This factor is therefore labeled Easy Grade.

The second factor relates to students being influenced by their environment and the culture on campus. Variables included pertain to cheating because of peer pressure, campus culture, excitement and low risk of being caught or punished. This factor is labeled Campus Culture.

The third factor pertains to difficulties faced by students in the form of the limited amount of time they have left to devote to academic activities and to the inherent difficulty of course material. This factor pertains to true difficulties students have and is therefore labeled Hardship.

The fourth factor relates to the students’ perception of course materials and the instructors. Included variables are that students find the material, assignment or task irrelevant and that the instructor is poor or indifferent. This factor is labeled Perceived Lack of Quality Instruction.

Table 2: Factor Analysis Results of Reasons for Cheating

Variables	Factor 1	Factor 2	Factor 3	Factor 4
Needs/wants a higher grade	0.744	0.005	0.362	0.098
Student needs a higher grade	0.670	-0.147	0.342	0.112
Had the time but did not prepare adequately	0.642	0.012	-0.094	0.200
No one is hurt by this behavior	0.615	0.303	-0.015	-0.010
Everyone does it	0.173	0.740	0.135	-0.055
Peer pressure	-0.092	0.724	0.058	0.149
Thrill or challenge	-0.016	0.688	-0.051	0.179
Low risk of getting caught or punished	0.414	0.494	-0.149	0.046
Time pressure	-0.019	0.115	0.819	0.079
Difficulty of material	0.194	-0.047	0.763	0.093
Material, assignment, task is irrelevant	0.110	0.176	0.014	0.864
Instructor is poor or indifferent	0.186	0.088	0.205	0.799
Factor Labels	Easy Grade Instruction	Campus Culture	Hardship Lack of Quality	Perceived

5. Key Determinants of Dimensions of Academic Dishonesty

Separate regression models are specified for each of the Dimensions of Dishonesty. Independent variables are obtained from a review of the literature. The following hypotheses were developed in relation to each independent variable.

The literature indicates that GPA varies inversely with amount of cheating (Baird, 1980; Singhal, 1982; Graham et al., 1994; Genereux and McLeod, 1995). This leads to hypothesis 1:

H1: GPA will vary inversely with Flagrant Cheating, Collusion and Insidious Cheating.

The second independent variable (WORK) pertains to the amount of time the student typically spends in a week during a typical university semester in activities related to a paying job or jobs. Since the literature indicates that one of the dominant reasons for cheating is the lack of time devoted to studies (Brown, 1995, Davis and Ludvigson, 1995), it is hypothesized that the more time a student spends working on paying jobs during the semester, the less he or she is able to devote to academia and therefore would tend to engage in more cheating:

H2: WORK is positively related to Flagrant Cheating, Collusion and Insidious Cheating.

Salary expectations (SALARY) are related to the perception by the student of the risks or stakes involved in not doing well academically. While the literature indicates that business students engaged in more dishonest academic behavior (87%) than those in engineering (74%), science (76%) or the humanities (63%), it does not relate salary expectations to cheating (Meade, 1992). However, comparing salary expectations of business and engineering students against those from the humanities, it is obvious that the market often offers the former a higher starting salary. This leads to the next hypothesis:

H3: SALARY is positively related to Flagrant Cheating, Collusion and Insidious Cheating.

While literature shows that age (AGE) is inversely related to cheating (Graham et. al., 1994; Genereux and McLeod, 1995) it is reticent on what types of cheating activities are related to this variable. Given that younger students have been shown to cheat because they lack interest in some of their lower level classes (Lord and Chiodo, 1995), that they are more immature and less committed to academia (Diekhoff et al., 1996) and tend to live in residence halls on campus with greater opportunities for collusion, it is hypothesized that younger students tend to engage more in all forms of cheating:

H4: AGE is inversely related to Flagrant Cheating, Collusion and Insidious Cheating.

Students have been found to rate themselves more ethical than their peers (Meade, 1992). The more ethical students perceive themselves to be, the less their tendency to engage in cheating. This leads to the following hypotheses:

H5/6: The ethical rating of the respondent and of their peers are negatively related to Flagrant Cheating, Collusion and Insidious Cheating.

Easy Grade is the desire students have to obtain a higher grade without putting in warranted effort and often with the perception that the cheating behavior is hurtful to no one. It is hypothesized that Easy Grade is positively related to cheating. Campus Culture captures the culture on campus that allows, facilitates or enables these kinds of deviant behavior and should relate positively to all three dimensions of cheating. Hardship captures the inherent difficulty the student faces in either understanding the material or having time to devote to its study and is hypothesized to be positively related to cheating. Finally, perceived lack of quality instruction is the perception student have that the material or task is irrelevant and feel that the instructor is poor or indifferent. This is hypothesized to be positively related to cheating. The hypotheses related to the four dimension of motivations of cheating are summarized as follows:

H7-H10: Grade Desire, Campus Culture, Hardship and Perceived Lack of Quality Instruction are positively related to Flagrant Cheating, Collusion and Insidious Cheating.

The next three variables are nominal and are therefore analyzed separately. To investigate if there is a difference in the mean of different forms of cheating on class level, gender and part time versus full time status of students, iterations of analysis of variance were conducted. The following hypotheses were generated pertaining to these variables based on the literature.

Class level has been found by Brown (1995) to have no effect on cheating. However, bearing in mind that Freshmen are new in the university and generally unaware of the Campus Culture, it is plausible that they would tend to be less brazen and therefore indulge less in Flagrant Cheating:

H11: There is no difference in the means of Collusion and Insidious Cheating for all class levels. Freshmen have a lower mean of Flagrant Cheating than other class levels.

Gender has been investigated in the literature with mixed results. Davis and Ludvigson (1995) and Gene-reux and McLeod (1995) have found that males are more likely to participate in unethical academic practices. This would lead to the next hypothesis:

H12: Males would on average engage in more Flagrant and Insidious Cheating as well as Collusion.

While there has been work done pertaining to on campus versus commuter students, there has not been any comparison of part time versus full time students. Part time students are commuter students who generally do not spend enough time on campus to develop the networks often useful for engaging in dishonest behavior. Thus, it is hypothesized that:

H13: There is no difference in the amount of Flagrant and Insidious Cheating among part time and full time students, however full time students engage in more Collusion.

6. Results of Regression

Results of the regression models testing hypotheses one to ten are exhibited in Table 3. Looking across the table, it is seen that H1 is supported for Flagrant and Insidious Cheating. Results indicate that brighter students with higher GPAs tend to engage in less Flagrant and Insidious Cheating. The results are significant at the five-percent level. However, they tend to engage in more Collusion though this result is not significant.

Table 3: Regression Results

Flagrant Cheating ¹		Collusion ²		Insidious Cheating ³		
Variable	Parameter t-statistic	t-statistic	Estimates	Parameter Estimates	t-statistic	Parameter Estimates
GPA	-0.096	-1.989*	0.010	0.209	-0.142	-2.851*
Work	0.093	1.878**	-0.065	-1.289	0.065	1.270
Salary	0.129	2.742*	0.002	0.047	0.010	0.209
Age	-0.052	-1.053	-0.107	-2.101*	-0.046	-0.889
Ethical rating (respondent)	-0.345	-6.733*	-0.195	-3.741*	-0.216	-4.089*
Ethical rating (other students)	0.029	0.577	-0.064	-1.238	-0.073	-1.399
Grade pressure	-0.113	-2.392*	0.100	2.069*	0.054	1.096
Peer pressure	0.036	0.757	-0.76	-1.585	0.094	1.937*
Hardship	0.065	1.401	0.185	3.915*	0.005	0.103
Perceived lack of quality instruction	0.003	0.072	0.021	0.448	0.084	1.742**

* significant at the p=0.05 level; ** significant at the p=0.1 level.
 1.F-ratio = 8.01 (significant at the p=0.001 level)
 2.F-ratio = 6.14 (significant at the p=0.001 level)
 3.F-ratio = 5.22 (significant at the p=0.001 level)

Students who commit substantial amounts of time to paid employment during the school semester (WORK) as well as those who have expectations of higher salaries (SALARY) on graduation tend to engage in more Flagrant Cheating. The results show that WORK and SALARY are not significantly related to either Collusion or Insidious Cheating. Thus, H2 and H3 are partially supported for these variables.

AGE is shown to be inversely related to all three dimensions of cheating as hypothesized in H4. However, interestingly, it is only significantly related to Collusion. Younger students tend to engage in significantly more Collusion than older Students. There is no significant difference in Flagrant Cheating and Insidious Cheating between younger and older students.

How students view their ethical self is an important predictor of their decision to engage in all forms of cheating. As hypothesized in H5, students who perceive themselves as more ethical tend to engage in less Flagrant and Insidious Cheating as well as Collusion.

Looking at the four motivations of cheating, it is found that the Campus Culture is significantly related to Insidious Cheating. Similarly, when students feel a disconnect with their instructors or the course material, this Perceived Lack of Quality Instruction also results in more Insidious Cheating. H9 and H10 are partially supported for these variables.

Results also showed more Collusion occurring when students desire an Easy Grade and when they experience Hardship. These results are significant at the five-percent level.

7. Results of ANOVA

Hypotheses eleven to thirteen were tested using analysis of variance. Results investigating the relationship between various forms of cheating and class level of the students showed that the mean of Flagrant Cheating varies with the rank of the student ($F=5.13$; $p=0.002$). The Bonferroni test indicates that, on average, the mean difference between Freshmen and Sophomores as well as between Freshmen and Seniors is significant ($p=0.001$; $p=0.024$ respectively). This means that on average, Freshmen Flagrant Cheat less than either sophomore or seniors. Other forms of cheating, namely, Collusion and Insidious Cheating found no significant differences among different ranks of students.

The analysis of variance results shows that there is a significant difference in the means of Flagrant Cheating and Insidious Cheating between males and females ($F=14.51$, $p=0.001$; $F=4.23$, $f=0.04$ respectively). Males, on average, engage in more Flagrant and Insidious Cheating than females. No gender difference was found in Collusion.

The results indicate that there is a significant difference in the means of Collusion among part-time and full-time students ($F=6.73$, $p=0.01$). Full time students are found on average to engage in more Collusion than part-time students. No difference was found in other types of cheating.

8. Discussion

By identifying the salient dimensions of cheating, the analysis was able to comb out more clearly how different forms of cheating relate to student characteristics and motivations. For example, the literature identifies gender as a factor related to cheating (Karllins, Michaels, Freilinger and Walker, 1989; Davis and Ludvigson, 1995; Genereux and McLeod, 1995; Athanasou and Olasehinde, 2002). In this study, it is shown that males tend to engage in more Flagrant Cheating and Insidious Cheating than females. However, there is no difference in the amount of Collusion both genders engage in. A plausible explanation may be the difference in the way males and females perceive their moral self and society. Males tend to view their moral self as an independent entity while women tend to perceive their moral self in relation to society and within interpersonal relationships (Whitley, Nelson and Jones, 1999). As such, males would favor cheating activities that require little or no collusion with fellow students.

The literature has also shown that age is inversely related to cheating. The results of this study point clearly to the fact that it is significantly related only to Collusion. In other words, there is no significant difference in the amount of Flagrant and Insidious Cheating students of different ages engage in. However, younger students do engage in significantly more Collusion than older students.

GPA is also shown in the literature to vary inversely with cheating. However, the results of this study indicate that it is inversely related only to Flagrant Cheating and Insidious Cheating. There is no significant difference in the amount of Collusion in relation to GPA.

This study also highlights how different motivations of cheating are related to the dimensions of cheating. Collusion tends to be higher in situations where students desire an Easy Grade or if they are experiencing Hardship. Here, students try to help each other either by the passing or receiving of unauthorized examination information. Insidious Cheating tends to be higher in situations where students Perceive a Lack of Quality Instruction. This form of cheating also tends to arise when the Campus Culture facilitates or enables students to engage in these kinds of behavior.

The unexpected inverse relationship uncovered between Easy Grade and Flagrant Cheating may at the first cursory inspection appear counter-intuitive. A plausible explanation for the result could be that students who desire an Easy Grade, tend to engage in less Flagrant Cheating, as shown by the analysis, because they may be able to cheat more expediently in other ways such as by Collusion (significant at the five-percent level).

The results indicate several policy implications. One of them is the need to nurture a Campus Culture that teaches, supports and rewards honesty. Results show that younger students and full-time students tend to engage in more Collusion. This suggests the importance of educating incoming, full-time students, who have not been exposed to the culture on campus, on academic honesty. The literature shows that ignorance is often a reason given for engaging in these dishonest behaviors. Therefore, classes should include specific information about what constitutes academic dishonesty. Collusion in the form of giving and receiving unauthorized examination information must be shown to be unacceptable and dishonest rather than agreeable and the norm. These policies should be carried out not simply in the classrooms but also in areas where full-time and young students tend to spend much of their time such as study halls and residence halls. These areas should be targeted as prime spots to inculcate the peer culture of honesty.

The results also indicate that men tend to engage in more Flagrant Cheating and Insidious Cheating. Targeting specific male dominated activities such as athletic and fraternity would be appropriate.

Faculty play an important role. Results show that Campus Culture and the Quality of Instruction results in greater Insidious Cheating and Hardship results in more Collusion. University administrations should reward and encourage faculty to increase the quality of their course material so that students perceive the instruction to be relevant and engaging. Faculty input in and outside the classroom is also crucial if universities aim to nurture a campus culture of academic honesty.

In the light of many examples of contemporary business misconduct and especially of the more recent Enron case, the issue of how universities can inculcate honest behavior among its graduates is important. The failure to do so is just too cost.

9. Reference:

1. Allmon, D.E., Page, D. & Roberts R. (2000). Determinants of perceptions of cheating: Ethical orientation, personality and demographics. *Journal of Business Ethics*, 23(4), 411-422.
2. Athanasou, J.A. & Olasehinde, O. (2002). Male and female differences in self-report cheating. *Practical Assessment, Research and Evaluation*, 8(5), <http://ericae.net/pare/getvn.asp?v=8&n=5>.
3. Baird, J.S. (1980). Current trends in college cheating. *Psychology in the Schools*, 17(4), 515-522.

4. Brown, B.S. (1995). The academic ethics of graduate business students: A survey. *Journal of Education for Business*, 70(3), 151-156.
5. Brown, B.S. & Abramson, J. (1999). The academic ethics of undergraduate marketing majors. *Academy of Marketing Studies Journal*, 3(1), 62-71.
6. Brown, B.S. & McInerney, M. (2001). The academic ethics of business management students: A lesson for Professors. *The International Journal of Business Disciplines*, 11(3), 79-88.
7. Calabrese, R.L. & Cochran, J.T. (1990). The relationship of alienation to cheating among a sample of American adolescents. *Journal of Research and Development in Education*, 23(2), 65-72.
8. Davis, S.F. & Ludvigson, M.S. (1998). Additional data on academic dishonesty and a proposal for remediation. *Teaching of Psychology*, 22(2), 119-121.
9. Diekhoff, G.M., LaBeff, E.E., Clark, R.E., Williams, L.E., Francis, B. & Haines, V.J. (1966). College cheating: Ten years later. *Research in Higher Education*, 37, 487-503.
10. Genereux, R.L. & McLeod, B.A. (1995). Circumstances surrounding cheating: A questionnaire study of college students. *Research in Higher Education*, 36(6), 687-704.
11. Graham, M., Monday, J., O'Brien, K. & Steffen, S. (1994). Cheating at small colleges: An examination of student and faculty attitudes and behaviors. *Journal of College Student Development*, 35(4), 255-260.
12. Hollinger, R.C. & Lanza-Kaduce, L.L. (1996). Academic dishonesty and the perceived effectiveness of countermeasures: An empirical survey of cheating at a major public university. *NASPA Journal*, 33(4), 292-306.
13. Lord, T. & Chiodo, D. (1995). A look at student cheating in college science classes. *Journal of Science Education and Teaching*, 4, 317-324.
14. Meade, J. (1992). Cheating: Is academic dishonesty par for the course? *Prism*, 1(7), 30-32.
15. Rawwas, M.Y. & Isakson H.R. (2000). Ethics of tomorrow's business managers. The influence of personal beliefs and values, individual characteristics, and situational factors. *Journal of Education for Business*, July/August.
16. Sims, R.L. (1993). The relationship between academic dishonesty and unethical business practices. *Journal of Education for Business*, 68(4), 207-211.
17. Singhal, A.C. (1982). Factors in student dishonesty. *Psychological Reports*. 51, 775-780.
18. Sisson, E. & Todd-McMancillas, W. (1984). Cheating in engineering courses: Short and long term consequences. Paper presented at the annual meeting of the Midwest Section of the American Society of Engineering Education, March, Wichita, NE. Eric Document No. 242532.
19. Tom, G. & Borin, N. (1988). Cheating in academe. *Journal of Education for Business*. 63(January), 153-157.
20. Whitley, B.E., Jr. (1988). Factors associated with cheating among college students: A review. *Research in Higher Education*, 39, 235-274.

Notes