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Can engagement in academic dishonesty be described as planned behaviour or lack of self-control?

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Abstract

Background: Students' engagement in dishonest behaviours is problematic and may influence future professional practice.

Aims: To consider the antecedents predicting engagement in academic dishonesty.

Methods: A total of 433 pharmacy and medical students participated in a survey measuring engagement in academic dishonesty, self deception, justification, and acceptability. Hierarchical linear regression and path analysis methods were conducted.

Results: Engagement in academic dishonesty was predicted by later years of study, justification, responses to a case scenario and notions of acceptability (R^2 = 34%). An appropriately fitted path model showed that each explanatory variable correlated with engagement in academic dishonesty separately rather than being mediated by notions of acceptability.

Conclusion: It is likely that students are establishing different ethical frames of references when engaging in dishonest behaviours such as rational self-interest or Machiavellianism. The prevention of academic dishonesty and its intervention needs to consider individualised, group-based and institutional processes.

Keywords: *Planned behavior, excuses, attitude, self-control, pharmacy and medical education, academic dishonesty*

Introduction

Academic dishonesty is of particular concern to educationalists worldwide (Anderson & Steneck, 2011; Bili -Zulle, Frkovi , Turk, Azman, & Petrovecki, 2005; Guthrie, 2009). Academic dishonesty is linked to aspects of cheating, misuse of referencing, and misattribution of authorship (Guthrie, 2009). Cheating is an aspect of academic dishonesty whereby students / a student may misrepresent their own performance through copying from others or using other deceptive techniques to gain higher grades and qualifications (University of Auckland, n.d.). Academic dishonesty is evidenced at all levels of university strata, including students at undergraduate and post graduate levels (Aggarwal, Bates, Davies, & Khan, 2002; Coverdale & Henning, 2000; Rabi, Patton, Fjortoft, & Zgarrick, 2006), and university faculty (Shepherd, 2007). One intriguing example of this is the sometimes maligning interactions between academics and students and between hierarchies within departments (formal or informal); for example when powerful academics become authors on papers that they have had little involvement with (Guthrie, 2009).

Much of the research in this area has been descriptive focusing on prevalence and types of behaviour (Aggarwal, et al., 2002; Muhney et al., 2008 ; Rabi, et al., 2006). Nonetheless, one of the research issues associated with academic dishonesty is modelling why students engage in this behaviour so that a theoretical explanation can be employed to inform interventions and ameliorate this problem area (Roig & Caso, 2005). The theories of reasoned action and planned behaviour have been used to explain student involvement in academic dishonesty (Chang, 1998; Simkin & McLeod, 2010). The theory of reasoned action (Ajzen & Fishbein, 1980; Chang, 1998) can be described as a social psychology theory that aims to predict behaviour according to two behavioural intention-

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related antecedents, attitude and subjective norm. Attitudes are determined by a person's belief and their evaluation of the outcomes, while subjective norms relate to a person's own belief about what they should or should not do and their motivation to comply with those belief states (Chang, 1998). The theory of planned behaviour is an extension of this theory and proposes the addition of the notion of perceived behavioural control (Ajzen, 1991). Perceived behavioural control considers aspects of behaviour which a person has volitional control over as opposed to those behaviours they do not have control over, hence the ease to which they can perform the target behaviour. Perceived behavioural control is moderated by a person's sense of how much control they have over their behaviour and their perceived power to enact this control (Ajzen, 1991; Chang, 1998).

Several studies have used the theories of reasoned action and planned behaviour in business education (Chang, 1998; Simkin & McLeod, 2010). Chang (1998) compared the two theories in terms of predicting engagement in software piracy. The key constructs of behavioural intentions, attitude, subjective norm and perceived behavioural control were employed to model this engagement using both confirmatory factor analysis and structural equation modelling. The results revealed that the theory of planned behaviour was able to generate a more suitable model than the theory of reasoned action and this is likely due to the addition of perceived behavioural control. Simkin and McLeod used a similar methodology to investigate student cheating behaviours. In their study, Simkin and McLeod examined three areas related to the prediction of cheating behaviours. First, they considered the suitability of the theory of reasoned action in predicting attitudes towards cheating behaviours by mapping the factors availability, getting ahead, time demands, culture, morals and risk in predicting self-reported cheating activities. They also considered the subjective norm influences of family, friends and professors. Lastly, they investigated the differences between cheaters and non-cheaters in reference to these variables. Their model showed a good fit for behavioural intention and subjective norm in predicting cheating activity and there were some interesting differences between cheaters and non-cheaters in reference to the factors 'getting ahead', morals, and risk. In their final summation, Simkin and McLeod suggested that their model could have been improved by consideration of the theory of planned behaviour. These models create intuitively and empirically reasonable approaches to the understanding of academic dishonesty.

A further lens that has been applied to this area of study is the notion of excuses (Blankenship & Whitley Jr, 2000; Roig & Caso, 2005). Blankenship and Whitley Jr (2000) have reported that some students may fabricate excuses to obtain a certain academic dispensation. In addition, Bolin (2004) has considered engagement in academic dishonesty in relation to self-control and perceived opportunity. Accordingly, students who lack self-control may be more likely to engage in academic dishonesty as the opportunity presents itself. Linked to this formula is the notion of attitude which is also crucial to the theory of planned behaviour. In his study, Bolin found that forty percent of the variation related to academic dishonesty could be explained by attitude, which was a mediating variable for self-control.

The present study explored the issue of student self-disclosure of academic dishonesty in terms acceptability, reasoning, justification and self-deception by drawing on the theories and ideas embedded in reasoned action, planned behaviour, excuses, self-control, attitude, and opportunity. The variables employed in this study were considered following a review of the literature. Acceptability (Coverdale & Henning, 2000) was explored as a precursor to disclosure of actual engagement, the argument being that students who think academic dishonesty is acceptable behaviour probably intend to engage in this behaviour given the opportunity and/or need. Next, it was posited that acceptability could mediate aspects of reasoning (Ercegovac & Richardson, 2004; Latif, 2000), self-deception (Li & Bagger, 2007), and justification (Blankenship & Whitley Jr, 2000; Muhney, et al., 2008 ; Roig & Caso, 2005), and other incidental variables such as age, gender, and course and year of study (Bates, Davies, Murphy, & Bone, 2005; Hardigan, 2004; Muhney, et al., 2008 ; Ng, Davies, Bates, & Avellone, 2003; Rabi, et al., 2006; Rennie & Rudland, 2003). Consequently, the present authors aimed to consider these variables, methodologies and concepts in analysing academic dishonesty with respect to students in the schools of pharmacy and medicine. The primary research question driving this investigation was, "Can self-reported engagement in academic dishonesty be predicted by levels of social deception, the ability to solve an ethical dilemma, justification for engaging in academic dishonesty, and levels of acceptability around involvement?"

Method

Participants and Sampling

Four hundred and thirty three volunteers participated in the study (a response rate of 66%). Seven students were removed from the final analyses due to identifiable inconsistencies whereby their explanations in the commentary box clearly did not match with their Likert score. Demographic details of the 426 remaining participants are presented in Table I in the results section. The study was conducted in the schools of pharmacy and medicine at the Faculty of Medical and Health Sciences at the University of Auckland, Auckland, New Zealand. Pharmacy students in years 2, 3 and 4 were surveyed while only medicine students studying years 2 and 4 were surveyed. Year 3 medical students were not surveyed as they were in a critical part of their study programme and had been exposed to numerous surveys suggesting that they may be uninterested in the present survey.

Procedure

At the end of a selected lecture students were invited to participate in the research project and to fill in a series of questionnaires related to academic dishonesty. No prior definition of academic dishonesty was explicitly given to the students before they filled in the questionnaire although they were likely aware of, and had access to, the University's policy (University of Auckland, n.d.). In addition, information was obtained with respect to demographic variables such as age, gender, year and course of study. Ethics approval for the collection and use of data was obtained from the University of Auckland Human Participants Ethics Committee.

The dependent variable was defined as self-reported engagement in academic dishonesty (incidence). Students were asked to respond to 32-items regarding specific behaviours often cited in the literature in the area of academic dishonesty. Following a review of the literature (Aggarwal, et al., 2002; Coverdale & Henning, 2000; Harries & Rutter, 2005; Marshall & Garry, 2005; Muhney, et al., 2008 ; Pennington, 1996; Rabi, et al., 2006; Rennie & Rudland, 2003; Sheridan, Alany, & Brake, 2005), the items were selected and appraised by a research panel of five academics who have an interest in academic dishonesty and the items were then randomly placed within the 32-item questionnaire. Students were asked to rate each of the items in terms of a 6-point Likert scale of 'never true' to 'very true'. For example, items included 'using abbreviations written on arm during a written examination', 'using hidden notes in written examinations', and 'copying from a neighbour during an examination without the person realizing'.

A series of explanatory variables – level of moral and ethical reasoning, social deception, justification, and acceptability - were also investigated.

1. Level of reasoning (case) was measured according to students' responses to a moral and ethical dilemma: "Dr. Stephens is in charge of a patient who is seriously ill. All this patient needs in order to return to his good health is a small dose of drug Z. Unfortunately drug Z is extremely hard to get hold of. However Dr Stephens knows a source. In order to get the drug she will have to steal it for her patient." Students were asked, "Is it ethically permissible for Dr Stephens to steal the drug for her patient?" A Likert scale option was offered in the form of 'never agree' [1] to 'always agree' [6].
2. Social deception was appraised using the Self-Deceptive Enhancement (SDE) scale of the Balanced Inventory of Desirable Responding (Li & Bagger, 2007). SDE is linked to aspects of inflexible overconfidence, lack of self-insight, and an inability to gauge personal limitations (Berry, Page, & Sackett, 2007).
3. Justifications measures (justification) were also sought from students who admitted to engaging in academic dishonesty. A series of 18-items were developed by the research group and incorporated Muhney et al's list of participatory rationale statement (Muhney, et al., 2008) in terms of 'never true' [1] to 'always true' [6]. For example, 'did not feel it was serious', 'to save time', 'no fear of being caught', and 'teacher ignores cheating'.
4. Acceptability measures (acceptability) were generated by asking students to rate each of the 32-items regarding specific behaviours used in the self-reported engagement in academic dishonesty (dependent measure). Students were asked to rate each item using a 6-point Likert scale of 'never acceptable' [1] to 'always acceptable' [6].

Data Analysis

A hierarchical linear regression (Field, 2005) (HLR) approach was used to appraise the level of predictability between the dependent variable (incidence) and the explanatory variables cited above. A path analysis was then conducted to visually represent the levels of contribution of each of the explanatory variables. Statistical techniques were incorporated to complete a set of preliminary analyses and transformations in reference the contribution of possible confounding variables (age, gender, and course and year of study). For age, two dummy variables were coded, coding over 25 as 1 and all else 0 (older group) and 15-19 age group as 1 and all else 0 (younger group). In addition, to annul any problems with assumptions related to the cumulative effect of year of study we created a similar set of dummy variables. Henceforth, two dummy variables were generated: first year two was coded as 1 and all else 0 (early years) and then year 4 was coded as 1 and all else 0 (later years). Two statistical software packages were used to conduct these analyses, PASW (Muijs, 2011) and AMOS version 18 (Arbuckle, 2009).

Results

Participants

The demographic details show that the majority of students are within the age range of 20 and 24. In addition, more female than male students responded to the survey, but equal numbers of pharmacy and medical students responded. Lastly students from all three years responded for the pharmacy students and both second and fourth year for the medical students. In addition, student n-values for each stage of the analysis are also shown.

It is also important to acknowledge that not all 426 students responded to all of the questionnaire. Students tended to respond to the case scenario most often (n = 419) and to the justification section least (n = 144). The lower level of responding to the justification section was anticipated given that students were only asked to respond to this section if they had engaged in academic dishonesty. The response rate to this section implies that 34% of students admitted engagement.

Table 1

Demographic details of participants (n = 426)

Age categories	15-19	73
	20-24	317
	25 and over	35
Gender	Male	161
	Female	263
Course of study	Medicine	209
	Pharmacy	216
Study year	2	180
	3	68
	4	174
Variables	Incidence	410
	Case	419
	SDE	390
	Acceptability	379
	Justification	144

Note: missing values are evident as students did not respond to certain items

Preliminary analyses

An overall reliability check of the multi-item questionnaires was instigated using Cronbach's alpha test (Field, 2005). First, the 32-item questionnaire measuring engagement in academic dishonesty (incidence) generated an acceptable alpha score (α = .77), Second, the social deception measure (SDE) yielded a moderate alpha score (α = .54). Third, the 32- item acceptability questionnaire generated an acceptable alpha score (α = .83). Lastly, the 18-item questionnaire investigating students' justifications for engaging in academic dishonesty generated an acceptable alpha score (α = .86).

Several assumptions were checked prior to instigating the regression analyses (Field, 2005). First, multicollinearity was not observed. Next, the regression plots of the residuals versus predicted values confirmed that the assumptions of random errors and homoscedasticity had been met. In addition, the Durbin Watson statistic (1.83) was within acceptable limits indicating that for any two observations the residual terms were uncorrelated (or independent). Lastly, a series of exploratory factor analyses were instigated on all questionnaires but the findings revealed no identifiable factor structures that made any 'a priori' sense; hence the total scores which yielded high reliability coefficients were used.

Incidence of academic dishonesty

Regression analysis: Incorporating a HLR approach, the explanatory variables with respect to the dependent variable, incidence (incidence), were entered in several phases (see Table II): (1) age, gender, year of study, course of study as possible confounders; (2) the ratings for the case, justification, and SDE; (3) ratings for acceptability.

The step 1 findings, from the HLR, (see Table II) indicated that later years (β = .22, p < .05) contributed to the prediction of incidence. For step 2, later years (β = .24, p < .05), justification (β = .10, p < .05) and case (β = .11, p < .01) were able to significantly predict incidence. For step 3, later years (β = .18, p < .05), justification (β = .07, p < .05), case (β = .09, p < .01) and acceptability (β = .39, p < .001) were able to significantly predict incidence. In addition, there were significant increases in the R-square values over the three steps with step 3 capturing 34% of the variance.

Following this analysis two further sets of analysis were employed. First, a correlation matrix (Table III) between the major contributing variables from step 3 in the HLR in Table II was generated. There were significant positive correlations between scores on the incidence measure and those on acceptability (r = .57, p < .001), case (r = .25, p < .01), and justification (r = .25, p < .01). Second, there were significant positive correlations between scores on the acceptability measure and those on later years (r = .12, p < .05), case (r = .15, p < .05), and justification (r = .18, p < .05). Therefore, a model suggesting acceptability as a moderating variable was mooted. We acknowledge that certain variables contributed a low amount of explained variance to the model. However, our aim was to consider a comparative argument that made conceptual sense and to appraise the relative importance of these variables.

Consequently, a second HLR process was instigated using two steps to predict acceptability. In the first step, age, gender, year of study, course of study as possible confounders were entered and then in the second step case, justification, and SDE were entered. In the first step only older group (β = -.37, p < .05) was able to predict acceptability; however in the second step none of the variables were able to significantly predict acceptability. This prompted the next step to visually represent the model employing the major contributing variables identified in Table II.

Table II

A hierarchical linear regression: Regression weights for the dependant variable (incidence of academic dishonesty) with respect to the independent and demographic measures

	b	SE b	β
Step 1			
(Constant)	2.11	.10	
Gender	-.12	.08	-.13
Course	.07	.10	.07
Older group	-.22	.16	-.12
Younger group	.04	.13	.03
Early years	.08	.13	.09
Later years	.22	.10	.23*
Step 2			
(Constant)	1.37	.30	
Gender	-.02	.08	-.02
Course	.01	.10	.01
Older group	-.02	.16	-.01
Younger group	.03	.12	.02
Early years	.14	.12	.15
Later years	.24	.10	.26*
Sde	.06	.07	.06
Justification	.10	.04	.20*
Case	.11	.04	.24**
Step 3			
(Constant)	.62	.30	
Gender	.02	.08	.02
Course	.01	.09	.01
Older group	.09	.15	.05
Younger group	.02	.11	.01
Early years	.16	.11	.17
Later years	.18	.09	.19*
Sde	.02	.07	.02
Justification	.07	.04	.15*
Case	.09	.04	.21**
Acceptability	.39	.07	.42***

Note. R^2 = .09 for step 1: ΔR^2 = .09 for step 2 (*ps* < .01); ΔR^2 = .16 for step 3 (*ps* < .01). *p < .05, **p < .01, ***p < .001

Table III

Correlation Between Measures

Measure	Later years	Justification	Acceptability	Case
Incidence	.04	.25**	.57***	.25***
Later years		-.02	.12*	-.03
Justification			.18*	.10
Acceptability				.15*

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Path analysis

The HLR results suggest that several variables were able to predict the dependent variable engagement in academic dishonesty. These variables were later year, case, justification and acceptability. We, therefore, attempted to model these interactions using path analysis to obtain an insight into how these variables interact. We found that the justification data with its low 'n' reduced the power of the model, but felt it was an essential element of our argument and thus retained it in this model. Second, we decided to keep SDE in the model as this variable may have some relevance to the notion of the development of excuses. The resultant model is shown in Figure 1 and key associative elements in Table IV.

Table IV

Regressions weights for the Path Model in Figure 1 (Standard Errors in Parentheses; N = 356)

	Unstandardised	*Standardised*	*Level of significance*
Acceptability ← case	.06(.04)	0.13	Ns
Acceptability ← justification	.08(.04)	0.15	Ns
Acceptability ← SDE	.11(.08)	0.11	Ns
Acceptability ← later years	.18(.08)	0.17	*
Incidence ← case	.09(.03)	0.21	**
Incidence ← case	.40(.07)	0.44	***
Incidence ← justification	.07(.03)	0.15	*

Note: Ns = nonsignificant, *$p < .05$, **$p < .01$, ***$p < .001$; $\chi^2(8) = 6.40$, $p = .60$; GFI = .98; NFI = .91; RMSEA = .00

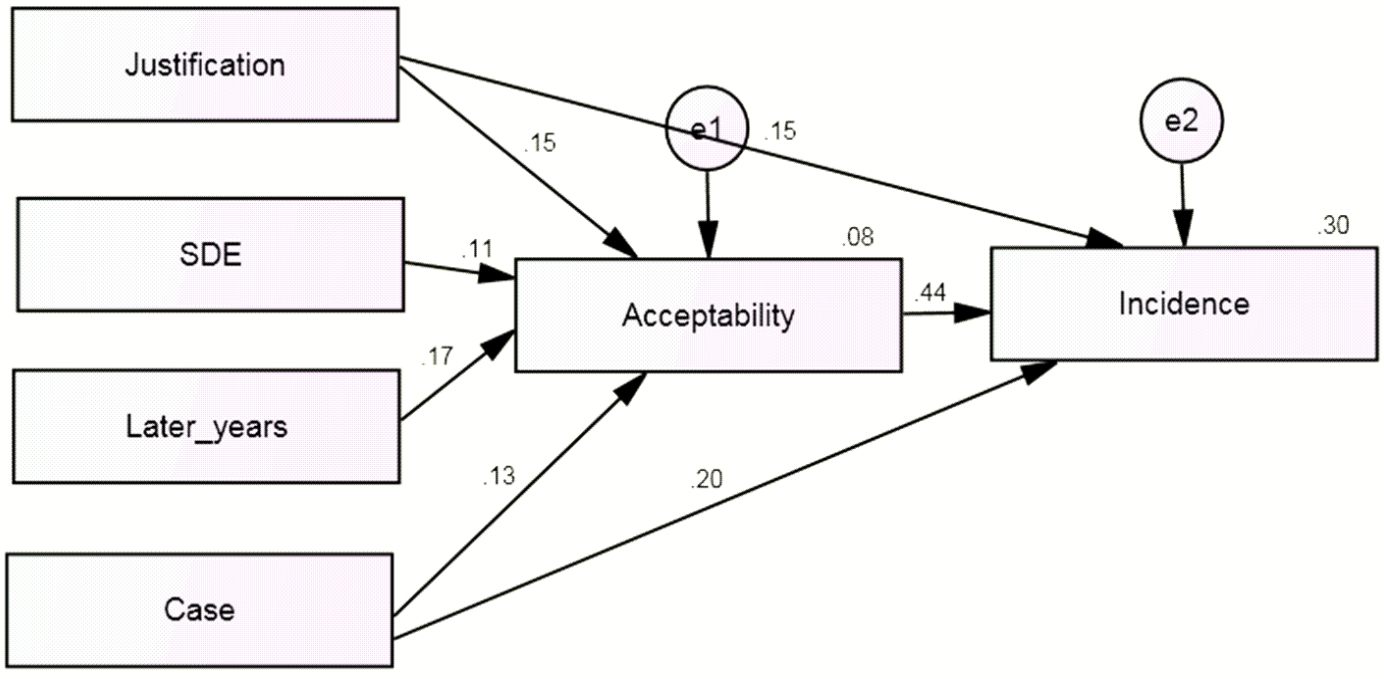

Figure 1

Path Model of Engagement in Academic dishonesty (Incidence) and its Associations with Acceptability, Justification, SDE, Later Years and Case (Standardised Solution; *N* = 356)

Note: e1 and e2 represent measurement error specific to each of the observed indicators.

The conventionally nonsignificant chi-square, $\chi 2(8) = 6.40$, $p = .60$, suggests that the model does fit the data well (McDonald & Ho, 2002). The Global Fit Index (GFI = .98) indicates that 98% of the variance in the sample variance-covariance matrix is accounted for by the model and is within acceptable limits (McDonald & Ho, 2002). The Normed Fit Index (NFI = .91) also signifies a good model fit (Bentler & Bonett, 1980). Finally the Root Mean Square Error of Approximation (RMSEA = .00) is less than .05 and thus corresponds to a 'good fit'. In the initial phases of building the model we removed the direct paths between the first level variables case and justification and the outcome variable (incidence) but found the model to be severely compromised. We then decided to test the model by adding the direct paths to incidence and found the model to be greatly improved suggesting that acceptability has a limited role as a moderating variable. The nonsignificant values (Table IV) noted for the paths towards the acceptability variable also suggest that most of the significant contributions do occur with the direct paths towards self-disclosed engagement (incidence).

Discussion

In this study, the constructed model was able to explain thirty four percent of the variance. In step 3 of the regression model the ability to solve an ethical dilemma (case), justifications for engaging in academic dishonesty (justification), and levels of acceptability around involvement (acceptability) were significant predictors of students' disclosure of engagement in academic dishonesty (incidence). In addition, the confounding variable 'later years' was able to predict incidence suggesting that students in later years were more likely to disclose engagement than those students in their earlier years of training.

To further investigate the stages of the model, a path analysis was instigated and this showed that the case and justification variables were not significantly mediated by acceptability but impacted incidence directly. A regression analysis was also employed to check all subsequent variables in terms of their ability to predict acceptability and the result convincingly showed no levels of significant predictability. These results have implications in terms of using theoretical paradigms to explain engagement in academic dishonesty. The following discussion considers the theories of planned behaviour and reasoned action (Ajzen, 1991; Simkin & McLeod, 2010) and then subsequently draws on the work conducted in the areas of excuses, self-control, opportunity and attitude (Blankenship & Whitley Jr, 2000; Bolin, 2004).

The theories of reasoned action and planned behaviour

As discussed earlier the theory of planned behaviour is an expansion of the theory of reasoned action (Ajzen & Fishbein, 1980; Chang, 1998) and provides a model whereby a series of defined items are posed to predict three factors linked to attitude, subjective norm and perceived behavioural control. Subsequently, these three factors are then posited as predictors of intention and ultimately outcome (Ajzen, 1991). As a consequence, the model poses a chain of events that leads to the final phase of engagement. The main implication is that intention precedes behaviour and is likely to be a significant moderating variable.

Applying this principle to the present study, it would appear that students would likely acquire and synthesise prior messages that inform their cognitions, beliefs, attitudes and behaviours. To engage in academic dishonesty they will probably have the intention to plagiarise which will be linked to several factors that include their perceived likelihood of success, whether they think academic dishonesty is of value to them, how much they are influenced by others, and their sense of difficulty in terms of enacting the behaviour (Chang, 1998). In this study, we adapted this idea to include students' ability to reason, their level of justification and deception, and considered the level of impact this would have on how acceptable the behaviour would be and ultimately their actual engagement.

According to the principles of the theory of planned behaviour, we expected that students' ability to reason, their sense of justification and degree of self deception would predict their sense of acceptability, which would then predict engagement. The implication is that acceptability (an attitudinal construct) impacts intention which influences behaviour. However, the results showed no clear pattern to affirm this idea. Essentially, the results showed that engagement in academic honesty was related to acceptability, justification and ability to reason (case scenario), but acceptability was not a significant moderating variable within the complete model. The correlation matrix did suggest that acceptability correlated with these variables but this was not confirmed in the regression or path analyses. It is fair to suggest that we could have questioned students about their intention more explicitly and this may have developed a different pattern and model. However, as far as this study is concerned the theory of planned behaviour was unable to succinctly explain the present results, as different paths were able to predict the actual disclosure of behaviour (incidence)

Theories of excuses and justifications

The notion of false excuses has been considered in light of academic dishonesty, whereby false excuses are fabrications employed to avoid academic responsibility (Blankenship & Whitley Jr, 2000). Blankenship and Whitley (2000) were unable to empirically affirm the connection between false excuse making and cheating behaviours, however they did show that twenty two percent of their cohort "reported a false excuse to avoid taking an exam (p. 6)". Moreover, they were able to ascertain that false excuse making was related to increased substance abuse, engagement in illegal behaviours, risky driving behaviours, and unreliability. In their summation, Blankenship and Whitley posed the idea of ethics of social responsibility versus ethics of conscience. Social responsibility implies conformity and is likely to be socially defined. In contrast, conscience connotes a more personal reference and can lead to more individualised behaviour. This model may be more able to explain the results of the present study in which students are engaging

in dishonest behaviours and this is linked to high ratings in response to the case and high ratings in response to justification prompts. Consequently, the students who are engaging in academic dishonesty in this study are likely to be using a frame of reference linked to the ethics of conscience and those not engaged may be employing a more socially responsible structure.

Justifications for engaging in dishonest behaviours is also a common problem (Blankenship & Whitley Jr, 2000; Granitz & Loewy, 2007). Granitz and Loewry (2007) postulated that some students may operate from different frames of reference such as rational self-interest or Machiavellianism (ethical egoism). In their study they found that eighteen percent of their sample engaging in academic dishonesty did so from a Machiavellian perspective while 4 percent did so from a position of self-interest. The most often cited ethical frame being deontology suggesting that most students consider decisions according a set of fundamental rights. Interestingly, students operating from a Machiavellian perspective denied engagement in academic dishonesty even when provided with incontrovertible evidence about engagement in dishonest behaviours. This is a different twist to the story of ethics of conscience and may explain why students, in the present study, who scored high levels of justification, also scored high levels of engagement in academic dishonesty. In addition, their levels of justification may be more rationally based given the low level of association noted between SDE and incidence.

The model of this study tends to encapsulate aspects from several theoretical perspectives and suggests that students, given their diverse responses to the case scenario, are likely to be using different ethical frames of reference as posed by Granitz and Loewry (2007). The results, as shown in the diverse paths leading to incidence in the model, may also suggest that students may engage in the behaviours and then look for justifications for this engagement and evaluate the behaviour in terms of its acceptability. Accordingly, the results may support the argument that students engage in academic dishonesty due to lack of self-control linked with opportunity (Bolin, 2004). And this is likely moderated by their attitude. Attitude in this study could be moderated by students' evaluation of the case and their justification for engaging in academic dishonesty and whether they see this as acceptable.

The incidental finding suggesting that students in the later years of their study are more likely to admit to academic dishonesty is an interesting one. This is not, however, a new finding as Rennie and Rudland (2003) found that students in earlier years of study were more likely to identify certain behaviours as wrong compared with later years. For example, behaviours such as "forging a doctor's signature, resubmitting work for another part of the course, writing "examination normal" when it hadn't been performed, and submitting the same special study module report as another student) (p. 100)" were more likely to be considered 'wrong' by students in their early years than later years. Several explanations were posed for this difference including greater workload pressures and more awareness around academic dishonesty in later years, higher integrity in earlier years, different types of assessment for each year, and differences in attitudes. Students in later years involved in clinical experience may be more likely to be dishonest if they see their senior colleagues cheating, or if they believe dishonesty is tolerated or condoned. In addition, students with more experience may have more skills and opportunities to engage in academic dishonesty (Bolin, 2004). Nonetheless, it also been noted that one study found the reverse trend, whereby younger students in earlier years of training were more lenient in terms of their view of cheating (Hardigan, 2004) suggesting that students in their later years are less likely to cheat. There is clearly more scope for research in this area.

Implications and conclusions

There is no simple answer to the question about what drives students to academic dishonesty and the answer is a likely to be complex, case-by-case, and multi-layered. There are many reasons as to why students may engage in academic dishonesty that relate to a desire to succeed, reticence by faculty staff to identify and control for academic dishonesty, high expectations (by self and family), financial rewards and pressures, and language (Chang, 1998; Simkin & McLeod, 2010). Nonetheless, these individualised behaviour patterns may create innumerable combinations and permutations which suggest that remediation may need to occur at several levels. First, individualised remediation may be suitable for Machiavellian students and students with immutable or strong self-interested justifications for engagement. Second, more widely group-based instruction using a combination of techniques related to discussion around ethical and moral dilemmas, self-control, opportunity and attitude. And lastly, at an institutional level whereby assessments can be developed to ensure more individualised responses and involvement.

In answer to the research question, "Can self-reported engagement in academic dishonesty be predicted by social deception, the ability to solve an ethical dilemma, justification for engaging in academic dishonesty, and levels of acceptability around involvement?" There is some evidence to answer this question in the affirmative but nothing conclusive. Given that most models can only explain 30 to 40 percent of the variation there is likely to be several reasons as to why students plagiarise. The results in this study suggest that students could be operating using several different ethical frameworks as posed by Granitz and Loewry (2007). In addition, students are likely to be engaging in behaviours first and asking questions second. This suggests that Bolin's (2004) proposition in relation to self-control, opportunity and attitude may be able to explain the dynamics present in the current findings. Furthermore, it is likely that Bolin's ideas probably resonate more with the present findings than the theories of reasoned action or planned behaviours (Chang, 1998; Simkin & McLeod, 2010). It is important to acknowledge two limitations of the study: the self–report nature of the study and its reliance on students' compliance to answer the surveys accurately and honestly.

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