Chapter XV
Market Forces in Higher Education:
Cheating and the Student-Centred Learning Paradigm

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ABSTRACT

This chapter discusses the globalisation of education and the challenges and opportunities arising from technologies that can impact cheating behaviours in higher education students. The chapter, commencing by contextualising cheating, discusses the endemic nature of cheating and presents various reasons for and factors that may encourage students to engage in cheating. To illustrate the potential for favourable outcomes when the particular needs of a student cohort are recognised, the chapter then considers a case study that proactively changed assessment strategies in postgraduate education to forestall cheating. The positive outcomes are then used to support a proposition to offer students more than one learning pathway as a means of recognising that student populations have become increasingly diverse with a corresponding need for diversity in teaching paradigms.

INTRODUCTION

The current environment of higher education in Australia is a complex mix of competing ideologies and constraints placing pressures on academics and supporting infrastructures. As successive governments have responded to economic ratio-nalism and reduced funding to higher education, universities have been forced to compete with one another both within state and country boundaries and also internationally (Milliken & Colohan, 2004), changing the landscape of higher education. In essence, universities have been propelled into the uncomfortable position of responding to the

market and becoming "enterprise universities" (Marginson & Considine, 2000). Two important factors have contributed to this changed landscape. The first is international students that have made education Australia's third largest service export, earning $5.8 billion (Business Review Weekly, November 16-22, 2006, p.19). The second is technologies that have developed to facilitate online education and assessments for both teaching within institutions and for distance learning.

The impact of these two variables has meant that where student cohorts were once homogenous and captive to domestic constraints and expectations, cohorts have become multicultural, dispersed and subject to a plethora of constraints and expectations. While this new demographic has had many consequences, the impact of relevance here is the epidemic in cheating behaviors. The reasons for cheating, the means available (opportunity) to cheat and the frequency of cheating, has spread like a virus across the global education market (Hutton, 2006; Kennedy, 2004). Cheating appears to be endemic across many cultures and pedagogies (Magnus, Polterovich, Danilov, & Satvvateev, 2002) with business students being credited as the most likely to engage in cheating behaviors (Chapman & Lupton, 2004; Karassavidou & Glaveli, 2006; McCabe & Trevino, 1995; Phillips & Horton, 2000). McCabe, Butterfield and Trevino (2006) have also extended research findings to the postgraduate environment with consistent results. This chapter will examine a case study from a postgraduate unit within a business faculty to illustrate the strategies employed to combat cheating behaviors as part of subject design. The implications of strategies employed are then considered from a competitive markets viewpoint, to consider whether there is justification for the composition of student cohorts to be explicitly targeted and catered for by course design. How this perspective fits with a student-centred learning paradigm will also be considered.

BACKGROUND: GLOBAL CHEATING BEHAVIOUR

The contribution of technologies to education processes has been immense, with students and faculty each learning to adapt to an environment of continuous change and opportunities. Technologies have enabled greater access, richness and multimodality to suit individual learning styles, with students being empowered in ways that were previously not possible. However, this freedom has met with challenges as the diffusion of best practice pedagogies clashes with culturally grounded values, attitudes toward honesty and pressures to succeed as access to education becomes more open. Chapman and Lupton (2004) point out that:

while it is difficult for an instructor to manage academic dishonesty when the student and faculty are from the same country, the task becomes exponentially difficult when students and faculty have significantly different cultural backgrounds. Education, just like business, is now a global product. (Chapman & Lupton, 2004, pp. 426-7)

With business studies being the most popular course of study for international students, not only are students traveling to acquire an education but business schools are under increasing pressure from accrediting agencies to give their students and faculty international opportunities. With many partnership programs negotiated between U.S., UK, European and Australian institutions in emerging economies, faculty are indeed becoming more familiar with cultural diversity in student cohorts.

Chapman and Lupton (2004) have pointed out that there have been many studies in the U.S. which have addressed the subject of cheating, while in Asian countries research evidence about cheating behavior is more problematic. However, they site

evidence from the Shanghai Star (2002) which makes the claim that "(i)n China, Hong Kong, South Korea, and Taiwan, cheating on the computerized Graduate Records Exam (GRE) and the Test of English as a Foreign Language (TOEFL) has become so problematic that the exams have been suspended by the Educational Testing Service (ETS)" (Chapman & Lupton, 2004, p. 425). This suggests that cheating behaviors are widespread even though academic research concerning cheating in these countries is elusive. Chapman and Lupton (2004) also note that it is difficult to draw comparisons between attitudes toward cheating between cultural groups unless survey instruments are identical. Despite this conceptual difficulty, they refer to a number of surveys that variously indicate the following:

- Comparing U.S. to Hong Kong students, Chapman and Lupton (2004) conclude, "(o)verall, it appears that American business students are more likely to engage in academic dishonesty that Hong Kong business students …(perhaps because) … American students appear to have a more liberal interpretation of what is or is not academic dishonesty and additionally appeared more inclined to admit to the behaviors being assessed" (Chapman & Lupton, 2004, p. 432).
- There is "a relationship between cheating, country, and grade vs learning oriented attitudes" (Davis, Noble, Zak, & Dreyer, 1994, p. 427) when comparing Australian and American university students, with U.S. students being more grade focused.
- When comparing Japanese and U.S. students, the Japanese had higher cheating tendencies with a greater propensity to rationalize behaviors (Diekhoff, LaBeff, Shinohara, & Yasukawa,1999).
- When comparing Polish with American students the Polish students admitted to higher

frequencies of cheating (Lupton, Chapman, & Weiss, 2000).

In another study by Magnus et al. (2002), it was confirmed, by surveying students in Russia, the Netherlands, Israel and the U.S., that "students have a different attitude towards cheating depending on where they live" (p. 134). These studies contribute to the conclusions of Chapman and Lupton (2004) who suggest that no matter where an educator is in the world "it is imperative, even prudent, to consider the different academic integrity norms utilized by your foreign students and faculty" (p. 434).

CHEATING: ACADEMIC DISHONESTY

While studies concerning academic integrity are not new, as they have been reported since the 1940s (Phillips & Horton, 2000), the innovations in cheating behaviors arise from the ways in which technologies have facilitated and enabled different modes of cheating. The "newest nemesis in the academic marketplace – the Internet" (p. 150) provides the ultimate capitalist tool for supplying educational assistance for profit, perhaps at the expense of ethics, morality and experiential learning. The rising popularity of Internet sites for purchasing assessment tasks suggests that the acquisition of lifelong learning skills for the benefit of the knowledge economy has been circumvented with money being the only limitation. In the past, finding such assistance may have been a deterrent to engaging in this form of dishonesty. However, now opportunity is simple and impersonal with the familiar capitalist rules of supply and demand governing the process.

Hard, Conway and Moran (2006) define academic misconduct by reference to their university's code of conduct. The code reads as follows:

providing or receiving assistance in a manner not authorised by the instructor in the creation of work to be submitted for academic evaluation including papers, projects and examinations (cheating); and presenting, as one's own, the ideas or words of another person or persons for academic evaluation without proper acknowledgment (plagiarism). (Hard, Conway & Moran, 2006, p. 1059)

Plagiarism can be characterized as unintentional due to ignorance or lack of understanding or as deliberate. Universities all, to a greater or lesser extent, provide students with information about what constitutes plagiarism. And yet, instances of plagiarism are prolific. The rise in instances and methods of cheating supports a premise of intent. However, plagiarism represents only one facet of cheating. Students have become more adept at using a variety of techniques to enhance perceptions of performance, some of which have been significantly enabled by online technologies (Stoney & McMahon, 2004). In the past, deliberate cheating took the form of looking at another's exam paper, or trying to take into an exam reference material or copying portions (or the whole) of another's assessment task. While the Internet may have made plagiarism easier to execute, the avenues now available to allow others to do a student's work have grown significantly. Online technologies, in essence "cybercheating" (or cyber-pseudepigraphy as described by Page, 2004), can be harnessed to circumvent a variety of different assessment regimes and also as a means of communication to gain advantage (Stoney & McMahon, 2004; Phillips & Horton, 2000). Examples include allowing someone other than the enrolled student to:

- feign engagement in assessable online group discussion;
- construct database or Web-based data for information technology-based courses of study;
- access technologies and complete randomly generated case studies;
- provide a completed assessment task as an economic transaction over the Internet (these may be individual rather than replicated; however, they are still the work of another).

Students can also gain advantage by speedy communication of information in test environments where resource constraints do not allow simultaneous testing across all campuses and cohorts, or even within test environments. In online testing environments, evidence has shown that e-mail communication software can be surreptitiously open while students were engaged in completion of the test, ostensibly to request some form of assistance. In many circumstances, just who is sitting behind the keyboard completing the task and who has acquired the skills and knowledge gained during assessments is questionable. This is a particular problem in the provision of distance education.

Just as technologies have enabled cheating, so technologies have also been harnessed to find cheats. Software tools, such as *CopyCatch* or *Turnitin,* used by many universities can detect plagiarism but not whether the enrolled student actually completed the work submitted. In Australia, 30 universities use such software to detect students who cut and paste from the Internet. It is not unusual for international students to have a less than adequate command of spoken English, a perception supported by poor demonstrated literacy in student e-mail or intranet correspondence, and for them to display exceptional standards of English competency in assessment tasks. It is acknowledged that native English speaking students also have the same opportunities without language barriers arousing suspicion; however, the pressures on international students to perform can be more significant. Zobel and Hamilton (2002), confirm that international students were "a clear

majority identified as plagiarists by software" (p. 24). This was also supported by the chair of Academic Board at Deakin University, who claimed that there was a strong cultural factor in inadvertent plagiarism (*The Age* 12/11/06).

Why Cheat?

The issues contributing to the cheating epidemic can be categorized as a combination of traditional factors and more recent developments in the education market. The influence of the commercialization of the education process on attitudes to learning and the perception of value attached to learning have changed. Learning now competes with part-time work and is often the means to an end rather than an end in itself. How the means are achieved can be less important than just receiving the credential. This is true more so in the postgraduate environment where family, work and other pressures impinge upon time for study. McCabe et al. (2006) and Ghoshal (2005) suggest that the propensity to cheat in business students may be influenced by the free market philosophies which form the foundation of many units of study within business faculties. Such philosophies are suggested to be amoral, distancing students from a sense of moral responsibility for cheating and may be a factor in the willingness to "play" the odds of being caught.

While the temptation to cheat has always existed, the opportunities to execute cheating using an indirect technology medium may offer avenues which are perceived as somehow less risky. Phillips and Horton (2000), together with Stoney and McMahon (2004), confirm that "simple opportunity" plays a role in cheating behavior. Simon (2005) agrees that

when students have little to lose and much to gain by cheating, some will invariably choose to do so … The little that students stand to lose by cheating appears to be further diminished by

remoteness. When they never see their teachers or administrators, when everyone else involved is reduced to text messages at the other end of an Internet connection, there appears to be less concern about loss of face. (p. 500)

For distance learning students, remoteness and a sense of disconnection from the core learning environment can also contribute to a lack of affinity with behaviors that are characterized as cheating. This is particularly true when the online environment directs students to multiple further sites where cheating and plagiarism are detailed, requiring multiple "clicks" to drill down through Intranet sites and requiring detailed reading of material. When such self-information materials compete for scarce learning time, students are unlikely to utilize such resources well. Some of the more traditional factors contributing to the propensity to cheat were noted by Kennedy (2004) as including:

- not fully understanding university culture;
- inappropriate study skills:
    - poor time management
    - inadequate assignment preparation and writing skills
    - inadequate examination and test preparation skills
    - assignment tasks not clearly understood;
- no control over submission dates of assignments that coincide/clash;
- poor quality teaching by lecturers; and
- life issues (family, work, health) (Kennedy, 2004, p. 2).

To this list can be added reasons which are more prevalent among international students for whom the decision to study in Australia can involve significant financial sacrifices by family and involve lifestyle as well as learning chal-

lenges. Additional reasons for cheating (Zobel & Hamilton, 2002; Hinton, 2004) may include:

- an inability to adapt to western style learning;
- slow adaptation or inability to cope with Australian cultural diversities and differences including religious isolation and in some instances being unchaperoned;
- poor English comprehension skills in subject contexts;
- poor technological and computer skills; and
- fear of failure and consequent:
  - o financial hardship
  - o loss of face either personal or by the family
  - o inability to extend visas and complete the course of learning.

Hamilton, Hinton, and Hawkins (2003) suggest that the rising volume of international students seeking an Australian education requires that the needs of this group of students be addressed. In particular, they identify that international students are not a homogenous group with the individual student having to "come to terms with not only the teaching style of an Australian academic but also a diversity of learning approaches among classmates" (p. 55).

The factors noted can individually or in combination contribute to student cheating behaviors. However, the temptation and motivation for cheating is also impacted by perceptions about faculty and student attitudes in general toward cheating, opportunity, the risks of being caught and the penalties imposed. Hard et al. (2006) suggest "that expectations and beliefs about peers' behavior influence individual behavioral choices …and that overestimating the frequency that one's peers engage in a behaviour can lead to increases in that behavior" (p. 1059). Their research also suggests that "faculty beliefs about the frequency of student academic misconduct were positively

related to two important behaviors: prevention effort and efforts to challenge students suspected of misconduct" (Hard et al., 2006, p. 1075). This suggests that an active presence with regard to the policing of academic misconduct, the pursuit of those suspected of such behavior and making it known (rather than trying to keep quiet for sake of reputation) and meaningful penalties, can contribute to less academic misconduct. This is supported by Hutton (2006) who suggests that "peer and instructor influences, and administrative policies and institutional characteristics, appear to be more important than individual student characteristics" (p. 173) in influencing cheating behaviors (see also McCabe et al., 2006).

The Evolution of the Learning Environment

"Cybercheating" has been significantly enabled and has emerged as a consequence of the evolution of higher education under an economic rationalist agenda. The online revolution requires increasingly sophisticated technologies to administer student records, student access regimes, unit-specific material and research tools available through libraries. For the providers of distance education, technologies have allowed a greater connection with students in addition to the resource materials mailed to students. The ability to have greater communication with the teachers and other online learning tools are important measures for enriching the learning experience, reducing isolation and creating a greater sense of connection to a learning community. While these tools have facilitated access to education without the need to be on-site when engaged in the learning process, they increasingly require that academics be responsive, progressive and technology literate. These pressures challenge time management, which must be balanced within an environment of increasing class sizes, computer resource limitations and the need to maintain academic integrity. The complicated

and time consuming disciplinary processes can also mean that the reporting of student cheating can be viewed as a burden on academics with a reluctance to pursue cheating behavior by students (Gallant & Drinan, 2006). A perception of a soft approach toward international students by discipline committees to safeguard income streams has also been speculative commentary among academics in general.

Enabling of Cheating

The harnessing of technologies for learning has also fostered a corresponding innovation in assessment methods to generate efficiencies with more transparent tools and assessment criteria. This desire for greater transparency is in accord with the "market" perspective supporting a standardized (Marginson & Considine, 2000, p. 177), nondiscriminatory approach to education which can meet professional requirements and is offered to all qualifying students on the same basis (Parker, 2005). There are now many assessment processes within business studies which take advantage of online technologies to either mediate or deliver a particular task. For example, databases of randomly generated multiple choice questions can be made available to students for testing. Marginson and Considine (2000, p. 60) provide evidence that student-staff ratios in business studies are significantly higher than in other academic areas which can mean that resource issues generate a less than desirable environment for testing. For example, if all students in one cohort cannot have access to computers in a controlled environment for testing at one time, then opportunities for "cybercheating" emerge.

Consequences for Learning Styles

The paradigm shift from academic-centred to student-centred learning discussed by Gallie and Joubert (2004) presumes to a significant extent that the majority of students have the requisite underlying skills to deal with challenges faced. The new paradigm requires that students are generally self-motivated to move through unit materials and initiate contact with academics. This style of learning supports a critical appraisal approach with emphasis on open debate rather than acceptance of the role of the academic as an expert. The importance of interaction in forms of flexible, online and distance education is well established (Wilson & Stacey, 2004, p. 33). Evidence suggests that international students from Asian countries are more likely to take information uncritically and not question authority figures. This approach is at odds with the student centred learning paradigm (Hamilton et al., 2003) and may contribute to learning environment alienation, giving rise to reasons for cheating.

Anecdotal evidence also suggests that certain cultural groups have varying competencies in self-mediated study and computer literacy. Learning styles that provide basic data to be rote learnt requires little need for students to access technologies and seek information. A consequence of these variables is that students that lack confidence in using computers, mine the same basic unit data for assessments, thereby increasing the propensity for plagiarism.

Student Centred Learning as the Means to Lifelong Learning

Garrison and Anderson (2003) suggest that "the value-add in a 'knowledge based future' will be a learning environment that develops and encourages the ability to think and learn both independently and collaboratively ... with the motivation to continue learning throughout their lives" (p. 20). "If one accepts the premise that learning is enhanced through discovery, the Internet sets the stage of individualized growth" (Corder & Ruby, 1996, p. 31). The use of the Web-based learning allows for intelligent, flexible learning with facilitators and students searching, navigating and exploiting multimodal pathways.

This pedagogical approach would seem to best facilitate the needs of a knowledge economy. However, the knowledge and skills that students bring to a course will necessarily impact how they deal with new knowledge being taught. To presume that all have the same foundation skills and are thus able to equally conceptualise and utilize technologies to accomplish assessment tasks and graduate outcomes is naïve (Laurillard, 1993). Knowledge-based economies are dependant on learning outcomes that are derived from a continuum of learning experiences. Where this continuum presumes a standardized core of skills, the environment of global education is challenged.

Chapman and Lupton (2004) claim that cheating behaviors undermine learning outcomes by misrepresenting "what a student may actually have learned and can use after graduation. Academic dishonesty violates the foundations of the pedagogical process by undermining educator's attempts to motivate students to be life-long learners … cheating is a violation of trust, which is necessary to cultivate an active intellectual learning environment" (pp. 433-434). The utilization of best practice pedagogies in the form of student centred learning in these circumstances can be questioned.

As a means of combating the epidemic in cheating, the outcomes of a case study that applied a pragmatic approach to maintaining academic integrity and created a discord with a student centred learning paradigm, is discussed. The discord is considered as a rational approach to ensuring course quality by combining online learning with invigilated individual assessments.

A CASE STUDY OF STRATEGIES TO REDUCE CHEATING AND IMPROVE OUTCOMES

This case study represents a reflective analysis of changes that were initiated as a consequence of increasingly poor student outcomes for one subject in a postgraduate business program. The case study is not part of a carefully constructed program of analysis for which justification of strategies can be supported by reference to best-practice techniques. Rather, the strategies adopted reflect the outcomes of a number of meetings between academics, teaching and learning development staff and student support experts sharing a concern for deteriorating student performance. The existence of an imminent window of opportunity to initiate change in assessment methods for the forthcoming semester provided limited opportunity for a more systematic and considered approach to the issues highlighted. It is acknowledged that longer timeframes and other strategies may have yielded more pedagogically defensible methods.

Discussions with colleagues from other institutions suggest that the following scenario would not be uncommon for postgraduate education in a number of higher education institutions in Australia. For a postgraduate core unit in business studies, international students represented approximately 80-90% of the student cohort. Students enrolled did not necessarily hold an undergraduate degree related to the course of study being undertaken and generally demonstrated an inadequate level of English proficiency with respect to business terminologies. Incidences of reported and penalized plagiarism together with suspicion that many students did not prepare the assessment that was submitted increased substantially from semester 2/2003. Unit statistics also showed that although student outcomes for progressive assessments were satisfactory, there was a high incidence of poor exam results, particularly for those that did well in progressive tasks. The assessment regime became the focus of attention as there had been no significant change to unit content or staffing over the period of review.

Table 1.

	2/ 2003	1/ 2004	2/ 2004	1/ 2005
Number of students on campus	134	149	185	206
Number via distance learning mode	31	40	31	43
Total students enrolled	**165**	**189**	**216**	**249**
Staff-student ratio	1:41	1:47	1.43	1:41.5
Failure rate (%)	22	28.5	43.5	23.5
International students–on Campus (%)	70	75	85	85 +
Average mark for progressive tasks (/35)	26.3	24	26.7	21.8
Average exam mark (100%)	49.6	48	45.8	53.9

Unit Statistics

While the percentage of students who are designated as international cannot be conclusively determined as a consequence of pathways of entry into particular university courses, the trend supports rising enrolments for international students across the whole Australian university sector. During the period of review, it was generally perceived that students were not meeting the required standard for success. The content of the unit is subject to accreditation requirements with a professional body and thus, while content could not be significantly changed in the short term, the way in which the subject was communicated and assessed was able to be reviewed.

Additional complications arose as a consequence of the unique blend of distance learning

mode students within the same learning environment as other students enrolled in this unit of study. All students were treated equally using the same study material, the same assessment tasks and the same online discussion areas with all resources used on campus made available online. In this respect, as advocated by Clarke, Butler, Schmidt-Hansen, and Somerville (2004) "an established equivalent full-time course provides the gold standard" (p. 7) for distance learning to ensure the quality, accreditation and recognition of credentials. Accordingly, any variation to the assessment regime had to be suitable for both on and off campus as much as possible. In the case study, no attempts were made to unravel and discover whether findings were more or less applicable to distance learning students, however certain issues emerged that challenged the practical application of an equity model.

Cultural Awareness

During 2003 and 2004 awareness of cultural learning modes which impeded students' ability to generate positive outcomes within the case study institution began to occur. Discussions with individual students, within seminar groups, among academic staff in teaching and learning forums and as part of student centred learning resource groups provided insights into differing learning approaches. These following comments are not empirically justifiable; however, discussion with numerous students and with many other academic colleagues, suggest that these issues are not unusual. While insights may help to explain poor outcomes to some degree, they are also recognized as part of a larger group of issues.

In certain international cultures, the level of tuition fees paid to a tertiary institution provides an indication of the level of effort that is required to obtain a degree. The more that is paid, the lower is the effort required to attain an outcome. One student (subsequently confirmed by many others)

commented that "in our country we do not work at all during the semester, then study like crazy for three weeks at the end and so long as we get 35% on the exam, we pass." This suggested one possible reason why encouraging students to complete progressive assessment tasks by motivating them early, produced very poor responses. The unfamiliarity of studying in a progressive manner also meant that some students did not appreciate that weekly topics required some preparation before class delivery and for this to be followed up with problem solving in their own time. Such poor appreciation of study requirements initially suggested that many students had become so far behind in just 4 weeks that they were unable to recover sufficiently to pass the unit. While this may have been a contributing factor, there was, however, overwhelming evidence that many did exceptionally well in progressive assessment tasks and then produced very poor exam outcomes with many questions on the exam not being attempted at all. Such evidence suggests that progressive assessment tasks were either poorly retained by a large group of students, or that results obtained were not entirely a product of the students' own efforts.

Other evidence of learning styles at odds with a student centred approach emerged from the use of online learning environments. Students complained that when using the Intranet discussion areas that staff (who had been instructed to engage students and promote discussion) were "evasive and did not get to the point and provide the answer wasting people's time." These cultural groups wanted all materials to be provided and not to have to engage in discussion or group learning which would challenge their comprehension skills and perhaps embarrass by evident poor written or verbal skills. Not engaging in more broad-based learning techniques meant that, where theoretical concepts were applied to new situations and case studies, students were unable to make the link between the theory and practical applications. The perception by students that exam questions should be written the same way as they had been the year before with perhaps only the numbers changing was symptomatic of this approach.

Assessment Tasks

Without addressing the merits or otherwise of particular forms of assessment in an accredited postgraduate environment, the following assessment tasks are discussed as a means of identifying the forms of assessment that existed within the case study unit and how and why they were changed. During 2003/4 the university was in the process of changing from one intranet-based learning platform to another with the online environment generally characterized as a repository for stored material and for limited communication between students and academic staff.

For semesters 2/2003, 1/2004 and 2/2004 the assessment tasks in this unit were:

1. 10% essay;
2. 5% computer-based randomly generated case study in an uncontrolled environment;
3. 20% assignment based on application of theory to a case study with calculated outcomes and an analytical component; and
4. 65% closed book exam with a hurdle requirement that students must pass the exam.

Task one was required to be submitted in approximately week 4 of a 13-week semester, with many international students enrolling late and not yet having access to or being familiar with university infrastructures. Students in the majority of cases had only recently arrived and this was their first course of study in Australia. The task was submitted in hardcopy form, precluding the application of software such as *Turnitin* to detect plagiarism. However, the task was still the subject of many allegations and subsequent penalization of plagiarism. Various issues that became apparent were:

- students were found to have copied from one another with only formatting type changes;
- one had taken another's copy from a shared printer and submitted it as their own;
- level of English comprehension and grammar were far in excess of perceived student abilities; and
- whole paragraphs from the text were constantly identified.

Task two required students to apply knowledge gained in seminars to a randomly generated computer-based case study, and to submit this case study for assessment. The task was essentially self-assessing so that where students did not attain full marks, they could attempt another exercise as often as they wished until the knowledge level increased and the final best effort was submitted. Most students were able to attain full marks for this assessment. Subsequent student efforts using these basic concepts cast significant doubt over the abilities demonstrated in assessments submitted. It became very clear in the exam that knowledge assumed, based on this task, was not held.

Task three was also submitted in hardcopy form with many calculations being identical, making it difficult to assess the presence of plagiarism. However, where calculations were consistently incorrect and written analysis demonstrated the same spelling errors on more than one submission, cheating was reported. Also worthy of note, were the observations of a sessional staff member in the student cafeteria. Having been warmly greeted by a past student, it was observed that the student was "checking" (in effect preparing) many assignments for students in what looked like a small business operation. This task was worth 20% of the assessment in the unit and exam outcomes for questions relating to this topic cast significant doubt that knowledge demonstrated in submissions was held by students. Distance learning students posted their completed assess-

ments for tasks one, two and three to the university and these were subjected to the same scrutiny and marking processes as all other students. All students were treated equally with markers not being aware of the mode of enrollment.

Task four was a traditional exam with a section containing multiple choice questions and then a number of theoretical and practical problems. It was evident in the statistical analysis that many students did not attempt whole questions for which they had attained high marks in progressive assessments. Students were also found to have performed badly on the multiple choice section and in theory responses which supported a perception of selective underlying knowledge. Despite repeated written and verbal instruction advising students that a passing grade was necessary on the exam, students believed that if they did well in internal assessments they could still pass the unit. Many failing students found it difficult to accept that marks were not cumulative and that the exam represented a significant hurdle which they were required to individually attain. Distance students were examined using the same exam paper as domestic students with the exam scheduled as the same time by arrangement with other reputable educational providers in the country where distance learning students were domiciled.

Much soul searching and analytical review of student outcomes was conducted after the failure rate for students almost doubled over 2003/04. It is important to note that at no stage was any pressure applied from any quarter to change or gild results. The poor outcomes and cheating behaviors were also being experienced in other units with the faculty administrative system being burdened with rising incidences of reported and penalized cheating. It was noted, however, that at this time period the university had been successful in recruiting large numbers of international students from geographical areas previously underrepresented in previous cohorts. An analysis of the assessments tasks as set deter-

mined that they were appropriate in relation to the content of the unit, and that the assessment tasks and the criteria used to grade them were considered to be reasonable. However, students were achieving significantly poorer outcomes in a unit which had changed little in staffing, unit content and assessment regimes. In essence, the task of assessment review became to identify how the needs of predominantly international students in terms of competencies and learning styles could be addressed to reduce the incidence of cheating and to enhance learning (Hamilton et al., 2003). It was perceived that the most significant challenge was to encourage students to complete their own tasks so that knowledge was self-sustaining, providing students with the best opportunity to achieve a successful outcome.

Changed Assessment Regime: Semester 2/2004

Online technologies and infrastructure had developed over 2003/04 to allow consideration of new methods of assessment which would foster a more conducive learning environment for international students. We could not hope to find solutions to all issues raised; however, there was sufficient motivation by education development personnel and academic staff to initiate change and to ensure the means to assess the impact of change was available. Wilson and Stacey (2004) point out that being a "competent, confident online academic is a new and different role" facing many academics particularly if they are not from a technology background. With support, staff adapted to this new role with evidence of significant positive results.

Assessments Eliminated

The essay in task one submitted in week 4 was not considered to be a useful measure of learning. Students were still arriving in week 3. They were not significantly familiar with learning modes, where resources were available and multicultural assimilation had not yet been resolved. Requiring electronic lodgment and applying plagiarism software to a task set so early in the semester were not considered to solve the underlying issues of personal effort and students who were not prepared. This task was eliminated.

The random case study on computer software was also removed as subsequent efforts in the exam for related questions provided strong support for questioning the authenticity of assessment submissions. A student had also suggested that the task was a waste of time as he was aware of a person who knew how to operate the software and was completing multiple case studies registering in the name of various students for a fee.

Having eliminated the first two assessment tasks, and with significant doubts about the learning outcomes facilitated by assessment task three, all progressive assessments could thus be reconfigured and changed to reflect what was considered to be most supportive of individual student learning. The types of tasks selected to assess student learning were those that could be implemented within the short time frame available. It was understood that other alternatives may be equally or better able to achieve the desired results and the process of review would be continuous. The tasks to be used for assessment were determined by consensus between academics, student support specialists and teaching and learning development staff. The exam and percentage of assessment attributed to progressive vs. external (exam-based) portions of assessment in the unit were published data that could not be changed in the short term. As a consequence, the value of the exam and structure of the exam paper remained unchanged.

The New Assessment Regime

The new assessment tasks introduced were as follows:

1. 15% for a test-based case study using computer software in a controlled environment;
2. 20% for a short answer and multiple choice test using controlled release infrastructure technologies in a controlled environment; and
3. 65% for a closed book exam.

Task one involved the use of a commonly used brand of proprietary business software applied to a particular case study in week 8 of a 13-week academic period in a controlled environment. All students were required to purchase the software and had the option of using the software on their own computers or making use of computers on-campus. With additional funding made available to allow effective implementation, students were provided with dedicated tutorial support to become proficient in software usage. The tutorials were scheduled to ensure an appropriate basic level of knowledge has been constructed before the tutorial work consolidated their learning in a practical manner. Computer-based tutorials commenced in week 4 and concluded prior to the assessment task. Distance learning students were provided with the same tutorial program to work through with staff consciously providing more detailed support online for this task. All students were required to register for a particular limited number of test sessions that were controlled and invigilated by staff. Because resource constraints did not allow for all students to be tested at one time, there were three versions of the test which were randomly assigned to registered test sessions. The test files were released to students only at the registered time for a 1-hour window of opportunity and were electronically submitted at the end of the test session. The need to register for a timed selective release of test file data was applied to both on-campus and distance students with a "practice test" given to trial the electronic upload function. While there were many teething problems associated with access to software,

willingness of students to apply themselves to a task they deemed too difficult in the initial stages, and the need to develop a contingency plan for students that did not successfully submit the task, the average outcome for the completed task by students was a grade of 75%.

For assessment task one, opportunities to cheat in terms of plagiarism were not present. Opportunities to "cybercheat" existed only for those with strong information technology competencies where the test operating environment may have been circumvented. Because the test was run in a controlled small group environment with the necessity for registration and checking of student identification, students were compelled to personally attend and complete the assessment task. It was recognized that those students leaving the controlled environment could verbally pass on information to students in another session and evidence of this appeared in the form of prepared pertinent notes brought into a later session which were confiscated. It was interesting to note that students on campus were resorting to more traditional forms of cheating rather than "cybercheating." We recognized that perceptions of equity between on campus and distance students for this task were questionable as a consequence of not being able to verify who actually sat behind the keyboard at any remote location. However, we rationalised that for the minority of students possibly affected, for any one student to find an accomplice knowledgeable in the particular brand of software, to be available at exactly the right time, with the ability to complete and upload the task in the required manner, was statistically low.

Assessment task two was a short answer and multiple choice test timed and designed to provide an early warning mechanism to students in week 10 about their level of knowledge in preparation for the exam. In seminar groups, random exercises to ascertain the level of ability to write an appropriate response to theory questions, or to attain an adequate result in demonstrated multiple choice questions, indicated a poor level of

student preparedness. A database of questions for both short theory and multiple choice questions was constructed which, via controlled release to individual students in registered session times, produced randomly generated questions for every student. Assessing in a controlled environment again compelled students to attend the test in person. As the time for this assessment task approached there was flurry of activity among some students with an observed concern for "catching up." For this task the rationalization process we employed to consider equity between on and distance learning students was not as strong. We were not able to discern who sat at the remote keyboard nor were we able to control whether students used material to assist with answering questions (In subsequent periods the second of these anomalies was rectified by making the test "open book"). Outcomes were published in week 12 with an average mark of 55%. It was interesting to note that many students were not confident about their achievement in this test, with subsequent published outcomes confirming this perception. The test also acted to dispel a level of overconfidence by a distinct group that had an optimistic view of their abilities. However, the early warning mechanism allowed sufficient time for students to address knowledge short-comings before the final exam.

For assessment task two, again opportunities to cheat in terms of plagiarism were not present. Opportunities to "cybercheat" existed only for those with strong information technology competencies. Distance education students (as noted above) were not so constrained. It was observed that one on campus student surreptitiously had a form of e-mail communication software open while completing the test, ostensibly to request answers from another person. Also, a number of issues associated with the integrity of the testing environment have been noted for resolution as part of further development.

The final exam was, in content and format, similar to that of past years. Results in semes-

ter 1/2005 showed a significant improvement in student outcomes with the failure rate being dramatically reduced. While we were very enthusiastic about this result, the reasons for such outcomes are to a significant degree speculative. Statistical analysis of student performance showed that while progressive assessment marks were less than during 2003/04, students performed significantly better in the exam. The impact of the need for personal completion of assessment tasks with limited opportunities for cheating is suggested as a substantial contributing factor to the improvement in results. In addition, the ability for students to get some feedback concerning demonstrated test outcomes allowed for a "wake up" call before the final exam.

Other factors which undoubtedly contributed to the improved outcomes were a concerted presence on the unit's intranet site, specific computer-based tutorial support and a team of administrative and academic staff coordinating infrastructure technologies to ensure that unforeseen issues were quickly resolved. The use of progressive technologies seemed initially to make students uncomfortable; however, independently conducted student evaluations in semesters 2/2004 and 1/2005 provided strong student endorsement of the practical application and usefulness of online technologies. Students who considered the unit was "well taught," were prepared to "recommend" the unit to others and considered it "very useful to their future." Ratings for these criteria averaged four on a five point scale.

CONCLUSION

Cheating represents a global problem for those engaged in the provision of education. Distance and online learning environments have, in many ways, been enriched by the usage of technologies to connect learners and teachers and, at the same time, they have also been challenged by the opportunities these same technologies provide. At-

titudes to learning and the perception of the value attached to learning in a knowledge economy have raised the perception of a need for engagement with a learning paradigm. However, conflicting and competing priorities and cultural tensions associated with academic honesty suggests that a standardized approach to achieving, and the processes of learning, will not adequately address the needs of a diverse learning populace.

In the swing of the pendulum away from academic-centred learning to student-centred learning, it is acknowledged that the above case study involves a movement away from a perception of student-centred learning. This alone should not be cause for condemnation of the strategies adopted to improve unit outcomes. There is a place for flexibility in higher education, although it is acknowledged that comments from the minority group of domestic students were less than supportive of "being treated like under-graduates or school kids." The rising incidence of cheating in progressive assessment tasks was the catalyst for questioning the efficacy of applying a standardized model of learning based on best practice student-centred models to a heterogeneous student body. As part of a strategy to meet marketplace needs (and reduce cheating behavior) there may be a place for deliberately designing subject assessment strategies to better fit the learning styles of the "customer" in postgraduate education cohorts.

International (and other) students are faced with a myriad of reasons which may induce them to engage in conduct that is deemed to be cheating. However, the case study above suggests that while academics have little influence on the reasons for cheating, there is much that can be done to limit opportunity, a factor that Phillips and Horton (2000) and Stoney and McMahon (2004) confirm as being of significant relevance to cheating behaviors. Gallant and Drinan (2006) on the other hand, suggest that "the student cheating problem is an adaptive challenge (one that requires learning and changes in attitudes, behaviors, or values) rather than a technical problem (one that can be

solved in routine ways)" (p. 839). I acknowledge that the case study adopted a technical solution to solve an immediate crisis, an intolerable failure rate. While the university in this case study is proactive in its approach to limiting opportunities for cheating, detection and penalization of those found to be cheating, it would be difficult to convince the quality control monitors (both professional and within the university) that the current attitudes and values of the global student population can be accepted as trustworthy in the short term. [1]

FUTURE RESEARCH DIRECTIONS

It would be useful to explore the possibility of proactively offering students a choice in the style of learning within their chosen studies. Where sufficient volume exists to offer multiple streams of study, students could choose between a student-centred learning experience and alternatively an academic-centred learning experience. This recognizes that students accumulate, by virtue of all previous years of education, diverse styles of learning along the continuum from student to academic-centred learning. While it is not possible for students to be offered all possible permutations, a style that is less alien may diminish the likelihood of engaging in cheating behaviors. Commencing from a perspective that there are at least two clearly delineated styles of learning, the provision of choice, which is a hallmark of competitive markets, allows students to select a style of learning that has assessments and pedagogies specifically targeted toward a more explicit expectation of the learning experience.

New "corporate universities," in particular, are responding to the market and offering students what they wish to learn. There has been a proliferation of courses with increasing specializations providing students with a myriad of choice in the subjects which can be combined to make up an award. Extending choice to the style of learning

particularly for international students may contribute a better transition from previous learning experiences to higher education (Demiray, Nagy, & Yilmaz, 2007). Explicit streaming potentially allows choice for both academics and students recognizing that, like students, academics may have a preference for a particular teaching style. Not all academics have the willingness or ability to engage with students using increasingly more prevalent online and social software-based learning environments. Academic choice combined with student choice of learning style may contribute to a far more positive learning experience and for a shared view of expectations of that experience (Nagy & McDonald, 2007). However, the acceptance and explicit recognition of student diversity alone presents the academy with significant challenges in relation to the current uniform approach to teaching and learning, something that is likely to have significant implications for university processes.

It is acknowledged that the links between more familiar learning styles and cheating behaviors is speculative, and that further research is required to provide evidence that the streaming of students can be beneficial. However, as a deliberate marketing strategy, a university may find that student choice of course combined with choice in the style of learning provides a market advantage in an already competitive higher education market. It remains to seen how competition in higher education will continue to develop and whether flexibility for students will include the addition of choice between alternative learning styles. The conflict between the marketing appeal of more choice for students and the marketing appeal of economies of scale using a standardized teaching and learning approach is a domain that higher education can explore.

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ENDNOTES

[1]   This chapter is developed from a paper published in *Studies in Learning, Evaluation, Innovation and Development,* Nagy, J. (2006). Adapting to market conditions: plagiarism, cheating and strategies for cohort customization, 3(2), 37-47.