

MEASURING STUDENT PERCEPTIONS ABOUT

CHEATING:

A CROSS-CULTURAL COMPARISON

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INTRODUCTION

Background

An important issue for teachers in schools is student cheating, in various forms, on assignments and examinations, in order to gain better marks and grades. The importance of this issue has increased in recent years because of the increase in the proportion of marks given to assignment type assessments in many countries. There is strong pressure for students to obtain high marks and grades in economies with high unemployment levels and in many cases there is strong pressure to succeed from parents

and teachers. This paper reports on the analysis of attitudinal data from 1068 students in five countries - Australia, Austria, Costa Rica, Germany (former West Germany and former East Germany) and the United States - relating to student perceptions about cheating.

The journal literature contains many papers, mostly with United States data, on student cheating to gain better marks and grades and gives the impression that cheating is widespread and relatively well-accepted amongst students (Jendrek, 1992; Meade, 1992; Schab, 1991; Evans & Craig, 1990a and 1990b; Boyer, 1989; Deutsch, 1988; Haines, Diekhoff, La Beff & Clark, 1986; Bushway & Nash, 1977). However, no cross-cultural comparative studies of published cheating studies could be found except for a recent study by Evans, Craig and Mietzel (1993, in press).

In order to widen the empirical base of cheating studies and improve our understanding of cheating behaviour in the context of cultural values and moral development, Evans, Craig and Mietzel (1993, in press) studied cheating perceptions of urban secondary school students in West Germany, the United States and Costa Rica. They found that German students showed strong differences in cheating perceptions from both United States and Costa Rican students. The differences occurred in cheating problem perceptions, critical attributes of cheating, causal factors in cheating and beliefs about effective ways to control cheating, although there were some similarities across all three countries.

The differences in results between countries was interpreted as due to differences in competitive and co-operative reward structures in the education systems. The German system places greater emphasis on co-operation to achieve rather than personal effort to achieve as in the United States system. The present study extends the Evans, Craig and Mietzel (1993) study by increasing the sample from three to six countries; by increasing the sample from 322 to 1068 students; and by using a measurement model to create a common scale of attitude statements about cheating perceptions for students in all six countries at the interval level of measurement. This is expected to provide a better method of comparing any differences in perceptions between countries due to cultural and national effects.

United States Literature on Student Perceptions of Cheating

The literature on student perceptions of cheating by researchers in the United States has focused on up to four aspects of student attitudes towards cheating such as what constitutes cheating, why

and how cheating occurs, the characteristics of cheaters and how cheating can be discouraged. Bushway and Nash (1977) reviewed the literature pertaining to cheating including the personal characteristics of cheaters, school factors and reasons for cheating. They found evidence to support the views that cheaters are more likely than non-cheaters to be less intelligent, to be higher on extroversion and neuroticism, to be less self-sufficient, to be involved in studies that are perceived to be meaningless and more likely to be males than females. Evans, Craig and Mietzel (1993, in press) found that evidence for the gender differences in cheating vary with some studies showing strong differences and others showing no differences between males and females.

School factors, such as a strong anti-cheating or moral climate, a strong chance of being caught and punished, and positive open and fair attitudes in teaching and assessing styles, decrease the incidents of cheating behaviours (Bushway & Nash, 1977). The reasons given by students for cheating often relate to concerns about grades where there are pressures from parents, teachers, and administrators to achieve at a high standard. Evidence from reviews of the literature and studies by Evans and Craig (1990a, 1990b), Evans, Craig and Mietzel (1993, in press) and from Godfrey and Waugh (1993) support the views that student perceptions of why cheating occurs relate to situational factors such as low levels of supervision and low likelihood of detection, as well as teacher, class and student characteristics.

Evans and Craig (1990a), using a sample of 1763 students from middle and senior high schools in Washington State, studied student perceptions of cheating in terms of four aspects; cheating as a problem, what is cheating, why does cheating occur and how can cheating be discouraged. The four aspects were based on causal attribution theory (Wimer & Kelley, 1982), the

literature on cheating and interviews with students. The results suggested that high school students found that cheating was a problem; that there was some ambiguity about what constituted cheating; that the perceived causal attributes of cheating were teacher personality and behaviour, classroom characteristics and student characteristics; and that while some practices are more likely to discourage cheating than others, it was unlikely that cheating could be prevented. These results seem to confirm and extend earlier studies with secondary school students such as the Californian study. Brandes (1986) reported on a study of cheating in California involving 1,037 sixth-graders and 2,265 secondary school students (mostly eleventh-graders) in 45 elementary schools and 105 high schools. Cheating was reported as a significant problem involving substantial amounts of copying

in tests and plagiarising in assignments by students.

Recent studies of cheating in the United States have mainly focused on university and college students rather than secondary school students (Evans & Craig, 1990b: 326). In a survey of 15,000 students from thirty-one United States top-ranked universities, Meade (1992) found that cheating was prevalent in business, engineering, science and humanities courses. Moffatt (1990) surveyed 232 students at Rutgers University, New Jersey, and found that while 45 per cent admitted cheating in one or two courses, 33 per cent admitted cheating in an average of eight courses. The most common forms of cheating in examinations included copying from other students, having someone else take the test, using cheat-sheets and using advance copies of the test. While some students started cheating because they saw lazy students getting better grades through cheating, others did not cheat because of the fear of getting caught and punished. Greene and Saxe (1992), in a study of 250 undergraduate self-reported cheating behaviours, found that cheating was widespread; that cheating was not viewed as unusual; that cheating was blamed on pressure from parents and teachers and that it was seen as a reflection of the situational forces on students.

AIMS OF THE STUDY

The first aim of this study was to create a single and common multi-dimensional attitude scale, at the interval level of measurement, for perceptions of cheating of Australian, German, United States, Austrian and Costa Rican students using the four dimensions of cheating. The four dimensions are: perceptions of cheating as a problem; perceptions of what constitutes cheating; perceptions of why cheating occurs and perceptions of how cheating can be discouraged.

The second aim is to calculate the difficulties of the statements on an attitude scale, using the Extended Logistic Measurement Model of Rasch, and to compare the difficulties for the groups of students - Australian, German, United States, Austrian and Costa Rican - so that national and cultural differences in perceptions of cheating on the four dimensions can be studied. This should help to enhance our understanding of the development of attitudes towards cheating and help in the building of a model of moral behaviour and attitudes.

DATA

Data on cheating are difficult to acquire and many schools are reluctant to give agreement to survey students. Those that did

agree were particularly keen to ensure anonymity. A further problem was gaining accurate data and the researchers went to

some effort to make sure that the students answered frankly and honestly. The students were counselled at the beginning of the data collection sessions about the anonymity of their responses. They were assured that only group data would be reported without reference to student and school names. They were informed that the researchers wanted to discover trends in attitudes to cheating and thus it was essential that they answer the questionnaire honestly. A supervisor was present during the administration and whenever questions about items arose, the students were instructed to be honest about their experiences as they related to the item.

Data Sample

The data were collected from a total of 1068 students from five countries: Australia (n=223), formerly East Germany (n=135), formerly West Germany (n=213), Costa Rica (n=114), the United States (n=293) and from Austria (n=90). Except for the Australian data which contained 68 college students (18 year olds), all the students in the other countries were in grade 11 or its equivalent (17 year olds). The schools in each of the countries were situated in socio-economic areas where the students came from middle class backgrounds. All students in the sample completed a language-appropriate version of the same questionnaire.

The Australian data were collected in 1991 and 1992 from 68 Year 13 students (18 year olds) at a tertiary college in New South Wales, 107 Year 11 students (16 year olds) from a government school in Perth, Western Australia and 48 Year 11 students (16 year olds) from an independent school in Perth, Western Australia. The Costa Rican data were collected from 114 grade 11 students (17 year olds) at an academic type public school in 1989. The German data were collected from 348 grade 11 students in public schools at the gymnasium level in 1989 and 1990. The United States data were collected from 293 grade 11 students at public schools in Washington State in 1990. The Austrian data were collected from 90 grade 11 equivalent students in 1991. The data from the five countries are comparable, as far as possible, in that the students come from similar middle class backgrounds and public schools, they are of similar ages, the data were collected in the years 1989 to 1992, and all students completed the same questionnaire in an appropriate language.

The countries of Costa Rica, Germany and Austria were chosen to give some differences in student perceptions of cheating due to

nationality and culture for comparison purposes with the United States and Australian students. According to the Europa World Year Book (1992, 1993), Costa Rica is overwhelmingly Roman Catholic with Spanish as the national language; it had 6.4 per cent unemployment in 1991 and the lowest rate of adult illiteracy (7.2 per cent) in Central America (pp. 828-829). In 1989, an estimated 86 per cent of children aged six to eleven were enrolled at primary schools and an estimated 36 per cent of children aged 12 to 16 attended secondary schools (p.830). As a third world developing country whose Gross National Product (GNP) increased at an average annual rate of three per cent during 1989-1990, Costa Rica is developing relatively well economically and is educating its people (p.829).

Austria had 3.4 per cent unemployment during 1991 (Europa World Year Book 1993: 407); its people are German speaking with 89 per cent Roman Catholic and 6 per cent Protestant (p. 406). Education is free and compulsory from aged 6 to 15 years. Bordering with Austria, the former West Germany is approximately 50 per cent Protestant and 50 per cent Catholic (p. 1203); it had

6.8 per cent unemployment in December 1990 (p. 1208). West Germany has a strong capitalist economy and a strong work ethic. The former East Germany, which had been governed by communist governments since the Second World War, had 35 per cent Protestant and 7 per cent Catholic and unemployment at 6.3 per cent in 1990 (p. 1208). It is expected that East German students would have developed quite differently economically and culturally from West German students and this may contribute to different perceptions of cheating.

Questionnaire

A questionnaire on cheating was developed by Evans and Craig (1990) and used with grades 7,8, 9 and 12 in Washington State, in the United States. The questionnaire was based on previous research findings, attribution theory and pre-testing by Evans (Evans & Craig, 1990a: 45). It contained 109 items relating to four dimensions: perceptions of cheating as a problem (16 items); perceptions of what constitutes cheating (24 items); perceptions of why cheating occurs with teachers (9 items), perceptions of why cheating occurs in classes (9 items), perceptions of why cheating occurs among students (19 items); and perceptions about how cheating in examinations and assignments can be discouraged (32 items). A large number of items were used to increase the validity and the reliability of the data collection.

Perceptions of cheating as a problem ranged across the following

aspects which form the definition of student perceptions of cheating as a problem: cheating is serious and is a problem, cheating happens far too much, and cheating is discouraged in various ways. Students responded to sixteen attitude statements dealing with these three aspects as strongly agree, agree, disagree or strongly disagree.

Perceptions of what constitutes cheating contained 24 statements to which the students responded in one of four categories - definitely is cheating, probably is cheating, probably is not cheating, and definitely is not cheating. The statements covered all the common aspects of cheating including, for example, using secret notes, copying, using a replacement, plagiarism, and buying work. The statements were graduated from those with which most students would easily nominate as cheating, such as copying and buying work, to those with which some students might not regard as cheating, such as failing to show up for a test and submitting the same assignment in two different classes.

Perceptions about why cheating occurs contained 37 statements. To these the students responded in Likert type categories as strongly agree, agree, disagree, or strongly disagree. The thirty seven statements were divided into three parts: nine statements relating to beliefs about the characteristics of teachers in situations where cheating is likely to occur, nine statements relating to beliefs about the characteristics of classes where cheating is likely to occur, and nineteen statements about the characteristics of students who are likely to cheat. Statements about the characteristics of teachers concerned friendliness, boring, disorganised, difficult to understand, not good at helping, discouragement of cheating, and availability to help students. Statements about the characteristics of classes concerned difficulty and amount of content, lack of purpose, discouragement of cheating, norm-referenced assessment and relevance of assessment. Statements about the characteristics of students ranged through self-concept, planning, pressure, friends who cheat, miss school, too much extra work, laziness, don't like the teacher and don't relate study with achievement.

Perceptions about how cheating can be discouraged contained 32 statements that were answered as very effective, fairly effective, not very effective, or ineffective. The 32 statements were divided into 19 statements relating to discouragement of cheating in examinations and 13 statements relating to discouragement of cheating on assignments. Discouragement methods ranged from those that could be regarded as "light", such as putting students on their honour, rejection of grading and making it easier to obtain good grades, to the

more strict methods such as strong punishments and strong school emphasis on ethics.

MODEL OF STUDENT PERCEPTIONS OF CHEATING

The model of student perceptions of cheating used here is based on research by Evans and Craig (1990) and Godfrey and Waugh (1993). For the present study, it is proposed that student beliefs about cheating are developed from their experiences and knowledge about what cheating is, about what causes cheating and about how cheating can be discouraged.

Students believe that there are certain situations in which cheating is more likely to occur; they weigh up the pressures to achieve and the benefits of cheating undetected in particular situations and they link their experiences and knowledge to form their beliefs about whether cheating is a serious problem. The logic of this is represented by the following sequence. Cheating is a learned behaviour. Students will see other students cheating in various ways during their school life and see other people cheating in various life situations to gain an advantage. They will come to learn about the different situations in which cheating occurs. They will have pressures to succeed and achieve. This leads to their beliefs about the different reasons why cheating occurs. They will talk about cheating among themselves and listen to adults comment on cheating in a variety of situations. Their different families, backgrounds, friends and experiences, will ensure that the students vary in their experiences with and knowledge of cheating. They will vary in their beliefs about how to discourage cheating. They will subsequently form varying opinions as to whether cheating is to be considered important and in what circumstances one can more easily get away with cheating. They will come to believe that cheating is more likely to occur in classes that have particular characteristics, in classes with certain types of teachers, and in classes with students who show particular traits and characteristics.

For example, students will perceive that cheating is more likely to occur in classes:

- (i) where the reasons for learning are unclear and where large amounts of subject matter are covered than in classes where the reasons for learning are made clear and where there is sufficient class time to cover the subject matter;
- (ii) with teachers who are disorganised, take no steps to prevent cheating, are hard to understand and are dull or boring than with teachers who exhibit the opposite traits;
- (iii) with students who are afraid of failure, have friends who cheat, miss school, are angry with their teacher and

whose parents pressure them to achieve at a high level than with students who exhibit the opposite characteristics.

Students will link these beliefs about reasons for cheating, it is proposed, to their beliefs based on personal experiences as to whether cheating is a serious problem. This means that beliefs

about such issues as whether cheating is a serious problem at their school, whether they see anything wrong with cheating or not or whether one ever gets punished for cheating will be linked to their beliefs about reasons for cheating in particular classes, with particular teachers, and with other students.

It is expected that students can be discouraged from cheating, to different extents, by schools and teachers implementing particular policies in relation to examinations and assignments. For example, cheating can be discouraged in examinations by strict administration, proper seating arrangements, enforcing cheating penalties and by vigilant supervision. Cheating can be discouraged in assignments by explaining reasons for not cheating, explaining and enforcing cheating penalties and working more closely with students. It is also expected that cheating would be more likely to occur where students view cheating as a minor problem because the education system encourages co-operative learning that blurs the distinction between plagiarism and one's own work; where students feel that cheaters are hardly ever caught or punished; where adults and teachers cheat; and where they feel they cannot report cheating without fear of victimisation.

Traditionally, in measuring student perceptions of cheating, researchers develop uni-dimensional measures which are usually at the ordinal level of measurement. This is in the form of percentages or ranked data. In the present study, the model of student perceptions of cheating utilises a multi-dimensional approach to the measurement of perceptions of cheating at an interval level of measurement. This model of student perceptions of cheating means that one can collect data on perceptions of cheating using items from the four dimensions - namely, perceptions of cheating as a problem, perceptions of what constitutes cheating, perceptions of the characteristics of teachers, classes and students where cheating is likely to occur, and perceptions of methods of discouraging cheating - and construct a scale in which items from all four dimensions are ordered along it. By using the Extended Logistic Model of Rasch, the data relating to the items can then be used to create item difficulties at interval level nearly equally spaced along the measurement continuum of student perceptions of cheating. This will help to improve our understanding of cheating and to begin

to build a model of how best to discourage cheating.

ANALYSIS OF THE DATA

The Extended Logistic Model of Rasch

The Extended Logistic Model of Rasch can be used to measure defined attitudes and is based on three main assumptions. First, that when a student responds to an attitude statement in ordered categories (such as strongly agree, agree, disagree and strongly disagree), the probability that the student answers a particular category is dependent only on the student's attitude, which is constant for all statements defining the attitude, and the statement difficulty, which is constant for all students answering the statement. Second, that the attitude statement is eliciting a student response corresponding to the defined attitude; that is, there is content validity. Third, that both the student attitude and the statement difficulty are measured on the same scale.

The model creates an attitude scale at interval measurement level based on the log odds (called logits) of students' agreeing with the attitude statements. If a student with attitude A responds to

an attitude statement with difficulty D , the odds of success are equal to A divided by D and the log odds (in logits) are equal to A minus D . The attitude statements are ordered along the scale at interval measurement level from easiest with which to agree to hardest with which to agree. The log odds of a student agreeing with an attitude statement is related to the difference between the attitude and the difficulty as measured on the same scale.

The higher the positive difference between attitude and difficulty on the scale, the higher the odds that the student will agree with the statement and the higher the negative difference the lower the odds that the student will agree with the statement. This means that for those statements at the easiest end of the scale (those with negative logit values), students increase their chances of answering in agreement with the statement with increasing attitudes on the scale. It also means that those statements at the hardest end of the scale (those with positive logit values) are most likely to be answered in agreement only by students whose attitudes are at the very highest end of the scale (that is they have a higher attitude value on the scale than the difficulty value).

The computer programme Quest (Adams & Khoo, 1992), using this measurement model, checks on the consistency of the student

category responses. It calculates the student attitude on the scale that is required for the student to have a 50 per cent chance of passing each category (that is of answering strongly disagree, disagree, agree and strongly agree) for each attitude statement. These attitudes are called threshold values; they are calculated in log odds (logits) on the attitude scale and they must be ordered to represent the increasing attitude needed to answer each category (that is from strongly disagree to disagree to agree to strongly agree). Attitude statements whose thresholds are not ordered - that is, attitude statements for which the students do not use the categories consistently - are not considered to fit the model and are discarded.

The computer programme also checks that the student attitude responses fit the measurement model according to strict criteria. The criteria are described by Adams and Khoo (1992), Wright and Masters (1982) and Wright (1985). The fit statistics are weighted and unweighted mean squares that can be approximately normalised using the Wilson-Hilferty transformation. The normalised statistics are called *infit t* and *outfit t* and they have a mean near zero and a standard deviation near one when the data conform to the measurement model. A fit mean square of 1 plus *x* indicates 100*x* per cent more variation between the observed and predicted response patterns than would be expected if the data and the model were compatible. Similarly, a fit mean square of 1 minus *x* indicates 100*x* per cent less variation between the observed and predicted response patterns than would be expected if the data and the model were compatible. In the present study, all attitude statements had to fit the model within a 33 per cent variation between the observed and expected response patterns or they were discarded. This means that the responses of discarded statements were so different from the responses of accepted statements that the discarded statements could not be considered to be measuring the same trait on the same scale as the accepted statements.

The Measurement Scales

The data for each of the six countries - Australia, the former East Germany, the former West Germany, Costa Rica, Austria and the United States - were analysed separately with the measurement model. Of the original 109 attitude statements, 71 fitted the

measurement model for the Australian data, 71 for the East German data, 89 for the Costa Rican data, 83 for the West German data, 72 for the United States data and 75 for the Austrian data. Of these there were only 27 common attitude statements fitting the measurement model for the data from each of the six countries (see Table 1). The data were then re-analysed using only these

27 common attitude statements for each country. These 27 attitude statements (see Table 1) represent the measurement scale of student perceptions of cheating and they provide the basis on which meaningful comparisons can be made between the countries in terms of student perceptions of cheating. Any differences that occur in the attitude scale values between countries are due to differences in the causes of those attitudes within the different countries. While it is not possible to determine these causes from the data collected - further data based on appropriate models would be needed from each country - it is possible to positively conclude that student perceptions of cheating are different in the five countries studied and that these differences are due to national and cultural effects. The measurements provided in the present study can be used to provide some of the differences in student perceptions between countries.

TABLE ONE

DIFFICULTIES IN LOGITS OF THE 27 COMMON ATTITUDE
STATEMENTS ON STUDENT PERCEPTIONS OF CHEATING

ITEM	AUSTRALIA n=293	AUSTRIA n=90	EAST n=135	COSTA n=114	WEST n=213
23	-0.67			+0.64	+0.65
+1.48		+0.16		+1.06	
26	+0.44			-0.12	+0.27
+0.67		+0.87		+0.63	
27	-0.09			+0.23	+0.04
+0.96		+0.53		+1.03	
30	-0.56			-0.43	-0.60
-1.51		-0.33		-0.39	
31	+0.16			+0.45	+0.50
+0.40		+0.67		+0.48	
32	+0.99			+1.60	+1.00
+1.94		+1.58		+1.46	
41	+0.51			-0.33	-0.11
-0.07		-0.25		-0.17	
45	-0.08			-1.44	-1.13
-2.66		-1.44		-1.44	
57	+0.14			-0.86	-1.09

-1.29		-1.18	-0.93	
61	+1.50		+1.02	+0.69
+0.85		+0.14	+0.13	
66	+0.96		-0.39	-0.22
-0.25		+0.07	-0.37	
67	+0.90		+0.46	+0.26
+0.73		+0.12	+0.37	
68	+0.26		-0.74	-0.47
-1.34		-0.94	-0.68	
83	+0.33		-0.47	-0.11
-0.71		+0.32	-0.80	
84	-0.86		-1.05	-0.78
-1.79		-0.87	-1.05	
85	-0.69		-0.09	-0.04
-0.32		-0.32	-0.31	
87	-0.55		+0.03	+0.05
-0.58		-0.18	-0.24	
88	-0.88		0.00	-0.13
-0.34		-0.48	-0.30	
91	-0.12		+0.29	+0.25
+0.89		+0.45	+0.28	
93	-0.22		+0.35	+0.06
+0.39		+0.11	+0.11	
98	+0.01		+0.36	0.00
+0.25		+0.07	-0.01	
100	-0.78		-0.62	-0.12
-0.50		-0.15	-0.04	
102	-0.29		-0.36	-0.47
-0.73		-0.50	-0.37	
103	-0.30		-0.29	-0.08
-0.49		-0.11	-0.42	
104	-0.41		-0.33	-0.25
+0.34		+0.31	-0.04	
105	-0.17		+0.96	+0.57
+1.95		+0.36	+0.92	
106	+0.46		+1.13	+1.27
+1.72		+1.00	+1.09	

Note: Item number refers to the items in the Questionnaire.

Australian Data

The scale for the Australian data ranges from statement 88 with a difficulty of -0.88 logits (very easy) [cheating can be discouraged by always enforcing the penalties for anyone who is caught cheating] through statement 45 with a difficulty of -

0.08 logits (medium difficulty) [cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating], to statement 61 with a difficulty of +1.50 logits (very hard) [cheating is more likely to occur among students who are involved with athletics]. The results indicate that these protestant middle class Australian students found it very easy to agree that cheating can be discouraged by always enforcing the penalties for cheating. This attitude is similar to that of students from each of the other countries except former East German students who found it much harder to agree with this statement. The Australian students found it very difficult to agree that cheating is more likely to occur among students who are athletes - an attitude similar to that of students in Germany and Costa Rica but different to that of students in the United States and Austria.

East Germany

For the former East German students, the scale ranges from statement 45 with a difficulty of -1.44 logits (very easy) [cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating], through statement 88 with a difficulty of 0.00 logits [cheating can be discouraged by always enforcing the penalties for anyone who is caught cheating], to statement 32 with a difficulty of +1.60 logits [cheating is using notes and other material from your past papers to write an assigned paper in a new class]. The results indicate that these middle class East German students found it very easy to agree

that cheating will occur when the teacher does not try to discourage cheating - an attitude held in common with students from each of the other countries except Australia where students found this statement much harder. East German students found it very hard to agree that using material from your past papers to write new papers is cheating - an attitude similar to that of students from each of the other countries.

Costa Rica

The scale for the Costa Rican students ranges from statement 45 with a difficulty of -1.13 logits (very easy) [cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating], through statement 98 with a difficulty of 0.00 logits [cheating can be discouraged by easing up on academic standards to make classwork less difficult], to statement 106 with a difficulty of +1.27 logits (very hard) [cheating can be discouraged by having students sign a pledge on each test that says they have done their own work]. The results mean that these middle class Costa Rican students find it moderately hard to

agree that easing up on academic standards will help to prevent cheating - a belief held in common with that of students from each of the other countries. The results also indicate that these students find it very difficult to agree that signing a pledge will prevent cheating. This attitude is also held in common with that of students from the other countries.

West Germany

For the West German students, the scale ranges from statement 45 with a difficulty of -2.66 logits [cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating], through statement 41 with a difficulty of -0.07 logits [cheating is more likely to occur in classes where the teacher is unfriendly to students], to statement 105 with a difficulty of +1.95 [cheating can be discouraged by creating a way for students who want to report cheating to do this without being identified as a snitch]. This means that these West German students found it moderately easy to agree that cheating may occur when the teacher is unfriendly - an attitude held in common with that of students from each of the other countries except Australia. The West German students found it very hard to agree that helping "snitches" will decrease cheating. This is an attitude held in common with that of students from each of the other countries except Australia where students found it moderately easy to agree that helping "snitches" will decrease cheating.

United States

For these middle class United States students, the scale ranges from statement 45 with a difficulty of -1.44 logits (very easy) [cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating], through statement 66 with a difficulty of +0.07 logits [cheating is more likely to occur among students who think that academic success or failure is relatively unimportant], to statement 32 with a difficulty of +1.58 (very hard) [cheating is using notes and other material from your past papers to write an assigned paper in a new class]. This means that, in common with the attitudes of students in each of the other countries, these United States students find it easy to agree that cheating is more likely to occur when the teacher takes no steps to prevent cheating and very hard to agree that cheating is using material from previous papers to write a new paper. There are, however, differences in attitude between students in the different countries on the attitude of academic success being unimportant. While East German, Costa Rican and

Austrian students find it relatively easy to agree that cheating is more likely to occur among students who think that academic

success is relatively unimportant, United States students find it harder to agree and Australian students find it very hard to agree.

Austria

For these middle class Austrian students, the scale ranges from statement 45 with a difficulty of -1.44 logits (very easy) [cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating], through statement 98 with a difficulty of -0.01 logits [cheating can be discouraged by easing up on academic standards to make classwork less difficult], to statement 32 with a difficulty of $+1.46$ (very hard) [cheating is using notes and other material from your past papers to write an assigned paper in a new class]. This means that, in common with the attitudes of students in each of the other countries except Australia where students find it harder to agree, Austrian students find it very easy to agree that cheating is more likely to occur when the teacher takes no steps to prevent cheating. The Austrian students, like the Australian, Costa Rican and United States students, find it moderately hard to agree that cheating can be discouraged by easing up on academic standards, unlike the German students who find it harder to agree with this.

Differences in Perceptions Between Students in Different Countries

The results of the attitude statement difficulties in Table One indicate that there are some strong differences in perceptions between students in different countries with respect to three dimensions: What is cheating? What causes cheating? How cheating can be discouraged? The differences can be attributed to the different influences of each country through education and culture and they are reflected in the attitude scale values which can be seen by examining Table One for the statement difficulties that are different by about 0.5 logits (about three standard errors). For example with regard to what is cheating, Australian students found it easy to agree that cheating is asking others to describe a test that they have missed but which you have taken at the scheduled time (difficulty -0.67 logits) whereas students from the other countries found this attitude statement more difficult with West German students finding it very difficult to agree (difficulty $+1.48$ logits).

As another example, while students from all five countries found it difficult to agree that cheating is using material from past papers to prepare new assignments, West German students found it very difficult to agree with this statement (difficulty of $+1.94$ logits). These results mean that West German students do not consider that using past papers to prepare new papers and getting

others to describe a test that has been missed are definitely cheating. This is interpreted to mean that West German students value a more co-operative view of learning than Australian students who place a strong value on personal achievement. These values are also supported respectively by the education systems in the two countries. This confirms and extends similar findings by Evans, Craig and Mietzel (1993).

With regard to the reasons for cheating, students from each of the countries (except Australia where students found it moderately hard to agree [difficulty +0.26 logits]) found it easy to agree that cheating is more likely to occur among students who have parents who pressure them to succeed. West German students found it most easy to agree with this statement (difficulty -1.34

logits). Students from each of the countries found it easy to agree that cheating is more likely to occur in classes where the teacher takes no steps to prevent cheating; however, the West German students found it particularly easy to make this agreement (difficulty -2.66 logits) and the Australian students found it hardest to make this agreement (difficulty -0.08 logits).

The results above and similar variations shown in the data in Table One support the claim that variations in student perceptions of cheating occur with variations in cultural and national attitudes. For example, the data from the six countries in this study, place at one end of a continuum relating to co-operative learning the West Germans who have a strong work ethic to succeed and achieve together and at the other end the Australians who have a outdoor sunny climate, an easy attitude to work with a strong emphasis on personal achievement. The values of the other countries lie in between these and are reflected in the scale values.

The perceptions of what discourages cheating are interesting and they also appear to reflect national and cultural attitudes. With regard to the perception that cheating can be discouraged by fully explaining the reasons for cheating, the West German students found this most difficult (difficulty +0.89 logits), the students from the other countries found this difficult and the Australian students found it easiest (difficulty of -0.12 logits). The perception that cheating could be discouraged by using only essay tests was agreed by East German, West German, Costa Rican and Austrian students (difficulty about -0.50 logits) but not by Australian and United States students (difficulty +0.32 logits). This is probably due to the influences of co-operative learning and the examining systems that do not reflect out of school work strongly. For students from each of the five countries, the perception that cheating can be discouraged by

using different versions of the same test was an easy statement with which to agree (difficulty about -0.50 logits). This statement is culture-free and common to each country.

The perception that cheating can be discouraged by placing a strong emphasis on ethics and doing the right thing was easy for the Australian, East German, Costa Rican and Austrian students (difficulty about -0.25 logits) but difficult for the West German and United States students (difficulty about $+0.32$ logits). Countries like Australia have a cultural aspect that emphasises the "fair go for everyone" in contrast to West Germany and the United States where personal freedoms are more important. Hence, it is probable that the attitude statement about ethics and doing the right thing is not important to United States and West Germans unless it is also accompanied by emphasising personal achievement freedom.

CONCLUSION

This study made interval scale cross-cultural measures of secondary school student perceptions of cheating using a model of cheating based on three aspects: what is cheating, what causes cheating and how can cheating be discouraged. The scales include 27 attitude statements for secondary students in Australia, Austria, East and West Germany, Costa Rica and the United States. Since the scales are directly comparable, differences in difficulty values of the attitude statements on the scales can be attributed to differences in culture between the countries. Differences in culture that are likely to affect perceptions of cheating include West Germany's co-operative learning system, the emphasis in the United States on personal freedom and personal

achievement, the influence of the Catholic Church pervading Costa Rica, the "fair go mate" attitude in Australia and the strong socialist views of the former East Germany. Other differences and similarities reflecting the differences and similarities in examining systems and the use of outside-class assignments are also apparent. The results suggest that further cross-cultural studies involving hypothesised differences in cheating perceptions due to families, significant-other effects, education, work, learning and culture should be performed using interval scale measurement models.

There are a number of limitations to this study and these have been mentioned in the text as appropriate. However, there are three important limitations to note. The first is that some samples are small. The study should be replicated with male and female samples of about 500 each from city areas, urban farmland

areas and country areas in each of the countries used in the present study. The second important limitation relates to the attribution model. While this model of cheating has been useful, it might be better to expand the model to include a wider perspective of moral perceptions than just cheating in examinations and assignments. The third important limitation is that the present study only includes perceptions. It would be useful to collect data involving knowledge, beliefs, attitudes, intentions and behaviour in regard to moral behaviour as these are likely to be related causally.

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