

# **The Effect of Students' Cultural Values on their Student-Driven Learning Preference**

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## ***Abstract***

This study examined the relationship between business students' cultural orientation and Student-Driven learning styles of 364 higher education business students from Victoria University, Melbourne, Australia. Two previously existing inventories were used: Robertson and Hoffman's (2000) Cultural Values Scale, derived from the work of Hofstede (1980; 1991; 1998), and Honey and Mumford's (1992) Learning Style Questionnaire. One of the major findings of this study was that Student-Driven learning is characterised by students having high Masculinity, Confucian and Uncertainty Avoidance value ratings.

## Introduction

Barron and Arcodia (2002) have found that the majority of international students studying for an Australian qualification originate from Asia. Asia is Australia's predominant international market (Roach, 2003; Way 2003). In 2002 there were a total of 157,296 international students enrolled within Australian universities. These students represented a total of 20.4% of student enrolment (Roach, 2003). Roach (2003) predicts that Australia's higher education export will be estimated at more than \$38 billion by the year 2025. The education sector within Australia has become the third largest service export behind tourism and transportation and is growing at a greater rate (an increase of 2.9% in the 2002 financial year). There are an increasing number of international students studying in Australian Universities yet there is relatively little research into the extent to which students' cultural values influence their learning preference.

The question this paper is trying to address is: what is the relationship between students' cultural orientation and their preferred learning style? This research has wide ranging implications for Australia's higher education sector as international student enrolment has grown significantly over the past decade and is anticipated to rise to more than one million students by 2025 (Barron and Arcodia, 2002; Roach, 2003).

## Literature Review

Three of the most commonly used instruments for gauging learning styles are: Kolb's (1976) Learning Style Inventory (see: De Ciantis and Kirton, 1996; Sharp, 1997; Drew and Ottewill, 1998; Goby and Lewis, 2000; Simon, 2000; Henson and Hwang, 2002; Loo, 2002; Jones, Reichard et al., 2003); Honey and Mumford's (1992) Learning Style Questionnaire (see: De Ciantis and Kirton, 1996; Van Zwanenberg, Wilkinson et al., 2000; De Vita, 2001; Barron and Arcodia, 2002); and the Surface Learning/Deep Learning Continuum (see: Landrum, 1999; Zhang and Sternberg, 2000; Hassall and Joyce, 2001; Brown, 2003; Brown, 2003; Case and Gunstone, 2003; Passman, 2003).

Kolb's (1976) Learning Style Inventory was developed to measure an individual's ratings on the four learning dimensions: the Concrete Experience (CE), the Reflective Observer (RO), Abstract Conceptualisation (AC), and Active Experimentation (AE). Participants are prompted to rank order four words that describe these abilities. An example provided by Kolb (1974, p.30) highlights how the inventory works, "...one set of four words is "Feeling" (CE), "Watching" (RO), "Thinking" (AC), "Doing" (AE)". The Learning Style Inventory produces six scores one on each of the categories and two combination scores highlighting the individual's "*abstractness over concreteness (AC-CE)*" and "*active experimentation over reflection (AE-RO)*".

The Learning Style Inventory (Kolb, 1974; Kolb, 1976; Wolfe and Kolb, 1984) divides learning preferences into four categories and these are Divergers (CE and RO), Assimilators (AC and RO), Convergers (AC and AE), and Accommodators (CE and AE). Sharp (1997) describes the Diverger learning style as perceiving subject material concretely and processing it reflectively. One of the strengths of Divergers (Truluck and Courtney 1999) is the ability to view concrete situations from many different

perspectives. Assimilators are similar to Divergers in the sense that both orientations process subject material reflectively. What makes the Assimilator learning style unique is that subject material is perceived abstractly. These people (Truluck and Courtney, 1999) tend to specialise in the science/social science areas. Convergers (Sharp, 1997, p.132-133) are “*people who perceive reality through abstract conceptualisation, and process it through active experimentation*”. Their strength is in applying ideas, and they use deductive reasoning to arrive at answers (Truluck and Courtney, 1999). Accommodators are similar to Convergers in the sense that both orientations process subject material through active experimentation. The distinct difference between Convergers and Accommodators is how they perceive the material. Accommodators perceive reality through concrete experience. One of their main strengths is doing things and carrying out ideas as highlighted by Truluck and Courtney (1999). Kolb (1976) claims that there is not one learning style that is effective in every possible situation, and that flexibility is essential.

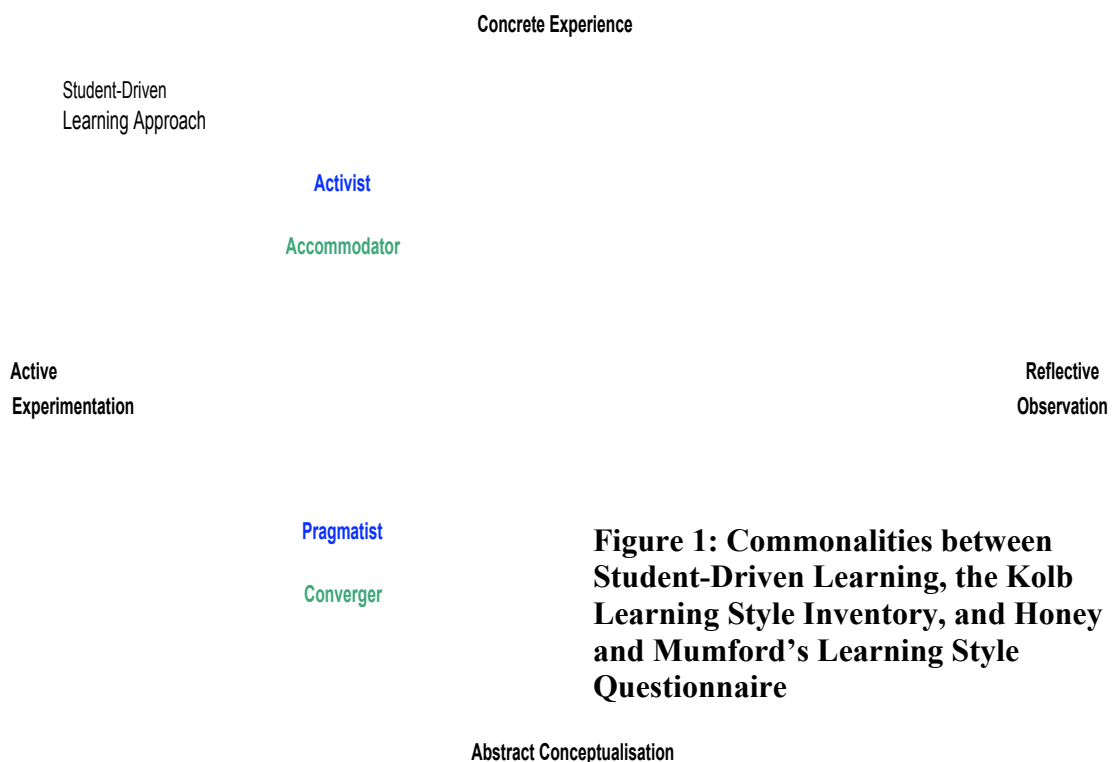
Honey and Mumford’s (1992) Learning Style Questionnaire (LSQ) was developed from Kolb’s (1976) theoretical framework. According to Honey and Mumford there are four learning styles. These are: Activists, Reflectors, Theorists, and Pragmatists. Good learning occurs, according to Honey and Mumford, when learners move through all stages. Activists are described as people who learn best from situations where they can engross themselves, in short ‘here and now’ activities, like business games and competitive teamwork tasks. Reflectors learn best from activities where they are able to stand back from events, listen and observe. Theorists learn best from activities where what is being offered is part of a system, model, concept or theory. Pragmatists learn best from activities where there is an obvious link between the subject matter, and the problem or opportunity on the job.

In a review of Honey and Mumford’s (1992) Learning Styles Questionnaire, Caple and Martin (1994), state that it is apparent that Honey and Mumford’s use of learning styles goes beyond identifying that ‘Person A’ would gain most from a lecture, and ‘Person B’ would profit by reading a book. They clearly imply that consistent behavioural characteristics are attributable to certain learning styles. De Ciantis and Kirton (1996) examined Honey and Mumford’s Learning Style Questionnaire and found adequate Cronbach’s alpha co-efficients on each of the four learning styles. Van Zwanenberg (2000) concluded that the Learning Style Questionnaire was a robust instrument with acceptable internal reliability. Mumford (1996) notes that the description of any strong or low learning style preferences obtained through the learning style questionnaire, is not one which is a fixed trait, but a preference that changes over time. This is highlighted by Barron and Arcodia’s (2002) study of Asian students studying in Australia, where they found that they developed from a reflective learning style to a more active learning style over time. Therefore Learning Style Preferences seem to be strongly affected by students’ Cultural Value Profiles.

Kolb’s (1976) Learning Style Inventory and Honey and Mumford’s (1992) Learning Style Questionnaire do overlap conceptually, if the Kolb Model dimensions of Concrete Experience, Reflective Observation, Abstract Conceptualisation, and Active Experimentation, are used as determining axes, see Figure 1. It becomes apparent that the Kolb ‘Accommodator’ construct, and Honey and Mumford’s ‘Activist’ construct, identify a similar type of learner; the Kolb ‘Converger’ construct, and Honey and Mumford’s ‘Pragmatist’ construct, also gauge the similar type of learner. The Student-

Driven learning style therefore roughly encompasses the Accommodator/Activist construct, and the Converger/Pragmatist construct, as highlighted in Figure 1.

This Student-Driven learning style favours surface or broad ranged learning, which is consistent with what Honey and Mumford (1992; 1995) have called a pragmatic-activist preference. This dimension can be described as context related learning where there is an element of practicality and to experience it in an active manner. This is consistent with Honey and Mumford's (1992; 1995) learning cycle. In contrast to this, a Teacher-Driven learning style favours deep and specialised learning which is consistent with Hassall and Joyce's (2001) definition. This is consistent with what Honey and Mumford (1992; 1995) have called the reflective-theorist dimension where people reflect back on the theory they have learnt and form conclusions.



**Figure 1: Commonalities between Student-Driven Learning, the Kolb Learning Style Inventory, and Honey and Mumford's Learning Style Questionnaire**

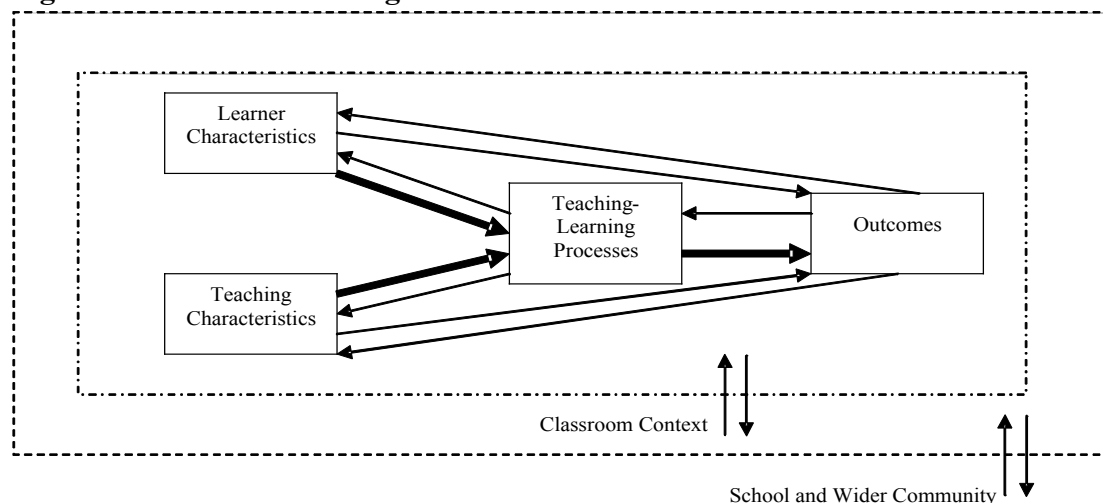
Therefore Student-Driven (Surface) learning can be depicted as (Hancock, Bray et al., 2002) a less structured classroom where students influence time, methods of instruction and engage in open discussions of ideas. Furthermore teachers are seen to be a channel to help students to establish and enforce their own rules, respond to student work by providing feedback and encourage students to provide additional responses, ask divergent questions of students, encourage students to select the learning task and the methods for completing it, encourage students to identify the rule of behaviour embedded within content, encourage students to summarise, review and draw conclusions on lesson objectives, encourage students to experience new activities and topics to study, and assess students readiness to move to the next learning activity.

Hassall and Joyce (2001) describe Student-Driven (Surface) learning in a more simplistic manner by stating that the learner reduces the subject material into smaller unconnected facts that need to be memorised with the main aim to reproduce the material at a later date. This learning approach has been stigmatised of being an immature learning style that has six characteristics (Webb, 1997; Hassall and Joyce, 2001): reproducing material correctly, passive learning, assessment as the only motivation to acquire knowledge, minimal strategies, memorising materials, not recognising patterns and principles. These learners have been described by Lavelle and Guarino (2003) as being focused upon reproducing information. However this learning style could also be described as assessment focused learning and is consistent with pragmatic-activist learning preference. This preference sees learning as a means to an end rather than an end in itself.

In Anglo-Saxon societies ‘good learning’ has traditionally been described in terms of deep approaches, which is opposite to the Student-Driven or a surface learning preference (Biggs, 1994). Biggs’ view is consistent with Hassall and Joyce (2001) where they depict good learning occurring when students use abstract frameworks to conceptualise tasks, plan and monitor their own progress, interpret outcomes, see learning as enjoyable and results-based. Biggs and Moore (1993) present their position on ‘good learning’ as being more student-driven than teacher-driven. ‘Good learning’, (Biggs and Moore, 1993) occurs when teachers vary their teaching methods and focus on Student-Driven learning through cooperative group work, subject content being presented in meaningful contexts, small class sizes, teachers ensuring there is a warm classroom climate and assessment addressing high cognitive level outcomes that is conducted in a non threatening way, see Figure 2.

It is apparent that not all researchers agree with the normative views of ‘good learning’ (see Biggs, 1994; Chan and Drover, 1997; Woodrow and Sham, 1998; Chan, 1999). ‘Good learning’ may depend upon how universities respond to the learning styles of different students, especially those of Asian orientation (Chan and Drover, 1997). It may also depend on the intended outcome of the learning.

**Figure 2: Model of Learning in a School Context**



Source: Biggs and Moore, 1993, in SIN Research Matters (1996), p.1

One of the most common instruments used to gauge cultural differences based on values is Hofstede's cultural dimensions (Robertson, 2000; Robertson and Hoffman, 2000). Hofstede (1980) found that cultural differences exist across different national boundaries, and thus proposed a four-dimensional framework of national culture and more recently added a fifth dimension (Hofstede and Bond, 1988; Hofstede, 1991). Hofstede defined culture in terms of five dimensions, and these are: Power Distance, Uncertainty Avoidance, Individualism/Collectivism, Masculinity/Femininity and most recently Confucian Dynamism (Long-Term versus Short-Term Orientation).

Power Distance (Hofstede, 1991), measures the individual's perception of inequality in a society (not wealth). He describes short Power Distance countries as being more democratic in their approach to power. Uncertainty Avoidance is the creation of complex rules in order to deal with any possible situation to avoid risks. Therefore the lower the Uncertainty Avoidance score the more comfortable that society is with ambiguous situations, and the more relaxed they are about change and innovation (Hofstede, 1980; 1991; 1998). Students who hold low Uncertainty Avoidance scores may be more comfortable with educational innovations. The Individualism dimension according to Hofstede (1991), is where the relationships between individuals are loose. Collectivism is its opposite, where relationships are highly respected and valued. He found the top four individualist national cultures to be all Anglo-Saxon, headed by the USA, followed by other European countries. Anglo-Saxon countries tend to score lower on the Collectivism dimension.

Masculinity refers to male dominated countries and they have been characterised (Hofstede, 1998) by being competitive and assertive. Anglo-Saxon cultures tend to score higher on the Masculinity dimension (that is low Femininity), than Asian cultures with the possible exception of Japan. In contrast to Masculinity, Femininity has been described as tending to favour cooperation, good working relationships and security (Hofstede, 1991; 1998). Therefore students who hold high Masculine values can be described as being goal driven. Within an education context these goals could be in line with quick course completion, which may indeed lead towards students holding a surface or Student-Driven preference to learning. Students who hold low Masculine values or high Feminine values still see goals as important, but they also see gaining knowledge and experiences throughout their course of study as equally important.

The Confucian value orientation has been described by Hofstede (1991) as including: perseverance, thrift, having a sense of shame and ordering relationships by status. Hofstede (1991) found China scored highest on the Confucian dimension, followed by other Far Eastern countries. The Anglo-Saxon countries scored low on the Confucian dimension.

Chan (1999) explains that Confucianism encourages the Chinese to respect hierarchical relationships between individuals. Therefore teachers are expected to teach as well as guide students. According to Ballard and Clanchy (1997) Asian students' academic work style has certain characteristics. These characteristics are: attending all classes, taking detailed notes, seldom contributing to class discussions, and only asking questions for clarity on a one-to-one basis with the lecturer. They also highlight the shock that International students face, and call it 'learning shock'. Causes of learning shock include: lectures running at a very fast pace, rhetorical questions being asked

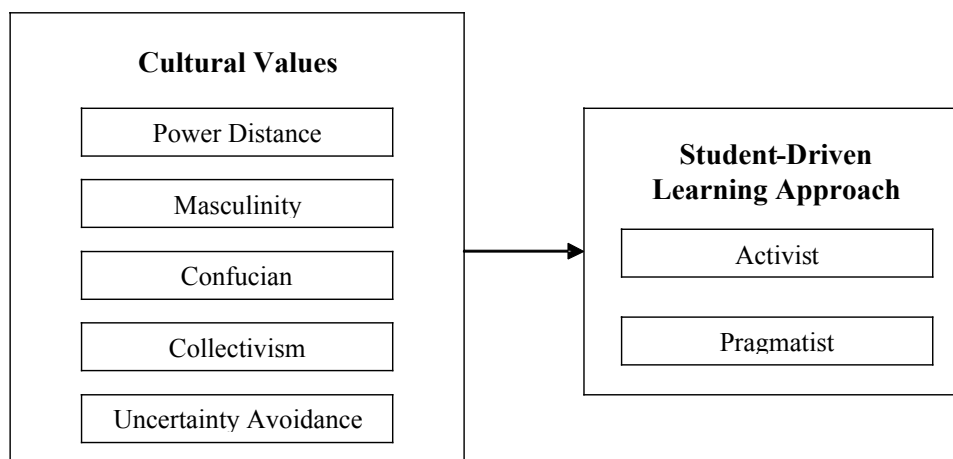
during lectures, no clear ‘correct answer’ identified in lectures, and the feeling it is impossible to take comprehensive notes of lectures. Therefore what constitutes ‘good learning’ is context and culturally dependent and a Student-Driven Learning Preference can be defined as: low Femininity, (that is high Masculinity), low Power Distance, low Uncertainty Avoidance, low Confucian Dynamism and low Collectivism (that is high Individualism).

Chan (1999), Woodrow and Sham (1997; 1998), and Biggs (1994) have depicted Chinese pupils, as people who are strongly influenced by the Chinese culture and Confucian/Collectivist beliefs. Using Honey and Mumford’s Learning Style Questionnaire, these students can be classified as ‘Theorists’. Support for Chan’s findings can also be found in Mohamed’s (1994) study. Mohamed (1994), focused on the preferred learning styles of Malaysian students. Similar to Chan (1999), Woodrow and Sham (1998), and Biggs (1994), Mohamed (1994) found, that the preferred learning style of Malaysian students is of ‘Theorist’ style. Therefore these students would have a low preference towards Student-Driven Learning.

In contrast to Chan (1999), Woodrow and Sham (1997; 1998), and Biggs (1994), Barron and Arcodia (2002), found Confucian students who study hospitality and tourism in their home countries had a ‘Reflector’ learning style preference. Western students in these courses had an ‘Activist’ learning style orientation. Barron and Arcodia (2002), and Volet and Renshaw (1996) found that the Confucian students over a period of time while studying in Australia, adopted an ‘Activist’ learning style preference, similar to their Western peers. Again highlighting that learning approaches are indeed influenced by students’ Cultural Value Profiles and the context for learning. The preceding discussion gives rise to the following Proposition:

P: That low Femininity (that is high Masculinity), Power Distance, Uncertainty Avoidance, Confucian Dynamism (Confucian) and low Collectivism (that is high Individualism) is positively related to the Student-Driven Learning Preference (the Activist and Pragmatist Learning Styles).

**Figure 3: Summary of Variables**



## Method

The participants of this study were taken from among Victoria University business students in Australia. A purposive sampling technique was used, and a sample of higher education business students was chosen. A total of 455 students were asked to participate in the study. With 80 percent return rate, the sample was 364. Robertson and Hoffman's (2000) scale was used to collect data for the cultural values section, as it was designed to measure an individual's beliefs along each of Hofstede's four initial dimensions as well as the Confucian Dynamism dimension. This study focused on the future subset called Confucian in the results. The past/present subset of Confucian Dynamism did not statistically hold in this sample. The cultural values were coded: 1= strongly disagree through to 5 = strongly agree. Honey and Mumford's (1992) Learning Style Questionnaire was chosen as an appropriate measure to gauge the Student-Driven preference as it was empirically developed from Kolb's (1974; 1976) theoretical framework. The Student-Driven preference encompasses the Activist and Pragmatist learning styles described by Honey and Mumford (1992) and hence this instrument was used to collect Activist and Pragmatist learning style data from the respondents. Students rated on a scale of 0 to 5 to what extent they agreed with these statements. The learning preferences were coded: 0 = strongly disagree to 5 = strongly agree. Data were entered into the SPSS version 11 statistical program.

## Results

The results are presented in two parts. The first is an examination of the reliability of the variables and the correlations between the variables within this study. The second section discusses the Ordinary Least Squares (OLS) regressions to test the Proposition. The cultural subscales had reliabilities of Individualism/Collectivism (Collectivism) 0.65, Masculinity/Femininity (Masculinity) 0.84, Power Distance 0.73, Uncertainty Avoidance 0.83 and Confucian Dynamism (Confucian) 0.62. The learning style dimensions had alpha reliabilities of Activist 0.78 and Pragmatist 0.74. The correlation coefficients for the Cultural Values of Confucian, Power Distance, Masculinity, Uncertainty Avoidance, and Collectivism, and the Student-Driven Learning Preference values of: Activist and Pragmatist are presented in Table 1 below.

**Table 1: Correlation Coefficients**

| Variable                 | 1       | 2       | 3        | 4       | 5     | 6     | 7 |
|--------------------------|---------|---------|----------|---------|-------|-------|---|
| 1. Confucian             | 1.000   |         |          |         |       |       |   |
| 2. Power Distance        | 0.282** | 1.000   |          |         |       |       |   |
| 3. Masculinity           | 0.240** | 0.507** | 1.00     |         |       |       |   |
| 4. Uncertainty Avoidance | 0.322** | -0.099  | -0.166** | 1.000   |       |       |   |
| 5. Collectivism          | 0.216** | -0.005  | 0.039    | 0.340** | 1.000 |       |   |
| 6. Activist              | 0.063   | 0.162** | 0.182**  | -0.017  | 0.044 | 1.000 |   |



7. Pragmatist 0.318\*\* 0.214\*\* 0.244\*\* 0.201\*\* 0.172\*\* 0.469\*\* 1.000  
*N* = 364, \*\* Correlation is significant at the 0.01 level (2-tailed).

Table 1 illustrates that there are significant associations between the cultural variable of Confucian and the cultural variables Power Distance, Masculinity, Uncertainty Avoidance, Collectivism, and the Pragmatist learning style, ( $R = 0.28, 0.24, 0.32, 0.22,$  and  $0.32$  respectively). The variable Power Distance also has a significant association with the cultural variable Masculinity and the Activist and Pragmatist learning styles, ( $R = 0.51, 0.16$  and  $0.22$  respectively) as shown in Table 1 above. Table 1 also highlights that the Masculinity variable has a significant negative association with the cultural variable Uncertainty Avoidance ( $R = -0.12$ ), and a significant positive association with both learning styles, ( $R = 0.18$  and  $0.23$  respectively). Uncertainty Avoidance has a significant positive association with the Collectivism cultural variable and the Pragmatist learning style, ( $R = 0.34$  and  $0.2$  respectively) as can be seen in Table 1. The Collectivism variable is also significantly associated with the Pragmatist learning style ( $R = 0.17$ ). There also seems to be a significant positive association between the Activist and Pragmatist learning styles, ( $R = 0.47$ ) as highlighted in Table 1 above.

The second section consists of two OLS regressions that were conducted to test the Proposition. The independent variables were: Power Distance, Masculinity, Confucian, Collectivism and Uncertainty Avoidance. The dependent variables were: the Activist learning style and the Pragmatist learning style in turn. As can be seen in Table 1, Power Distance and Masculinity were significantly correlated at the zero-order level with the Activist learning style. A standard multiple regression analysis was conducted between the Activist learning style and the independent variables of Power Distance, Masculinity, Confucian, Collectivism and Uncertainty Avoidance. The multiple  $R$  ( $0.203$ ) for the regression was significantly different from zero, ( $F(5,358) = 3.092, p < 0.01$ ). In total 4% (3% adjusted) of variation in the Activist learning style was accounted for by the variables ( $R^2 = 0.041, adj. R^2 = 0.028$ ). Tables 2 and 3 below indicate that the standardized regression coefficient (Beta) for only one of the variables (Masculinity) was significant. Of the 4% explained variance, Masculinity explained 1.3%. Though Power Distance was also highly correlated to the Activist learning style, it did not produce significant semi-partial correlations when the other variables in the equation were controlled for.

**Table 2: Activist Learning Style Model Summary**

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .203 <sup>a</sup> | .041     | .028              | .5246                      |

<sup>a</sup>. Predictors: (Constant), Uncertainty Avoidance, Power Distance, Collectivism, Confucian, Masculinity

**Table 3: Activist Learning Style OLS Regression**

**Coefficients<sup>a</sup>**

| Model |                       | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | Correlations |         |       |
|-------|-----------------------|-----------------------------|------------|---------------------------|--------|------|--------------|---------|-------|
|       |                       | B                           | Std. Error | Beta                      |        |      | Zero-order   | Partial | Part  |
| 1     | (Constant)            | 2.399                       | .223       |                           | 10.744 | .000 |              |         |       |
|       | Power Distance        | 7.453E-02                   | .047       | .097                      | 1.575  | .116 | .162         | .083    | .081  |
|       | Masculinity           | 8.053E-02                   | .037       | .133                      | 2.156  | .032 | .182         | .113    | .112  |
|       | Confucian             | -3.93E-03                   | .042       | -.005                     | -.093  | .926 | .063         | -.005   | -.005 |
|       | Collectivism          | 3.644E-02                   | .051       | .040                      | .717   | .474 | .044         | .038    | .037  |
|       | Uncertainty Avoidance | 1.871E-03                   | .046       | .002                      | .041   | .967 | -.017        | .002    | .002  |

<sup>a</sup>. Dependent Variable: Activist

As can be seen in Table 1, all of the cultural variables Power Distance, Masculinity, Confucian, Collectivism and Uncertainty Avoidance were significantly correlated at the zero-order level with the Pragmatist learning style. Another standard multiple regression analysis was conducted between the Pragmatist learning style and the independent variables of Power Distance, Masculinity, Confucian, Collectivism and Uncertainty Avoidance. The multiple  $R$  (0.406) for the regression was significantly different from zero, ( $F(5,358) = 14.133$ ,  $p < 0.001$ ). In total 16.5% (15% adjusted) of variation in the Pragmatist learning style was accounted for by the variables ( $R^2 = 0.165$ ,  $adj. R^2 = 0.153$ ). Tables 4 and 5 below indicate that the standardized regression coefficient (Beta) for three variables: Confucian, Masculinity and Uncertainty Avoidance were significant. Confucian explained 2.6%; Masculinity explained 2.2%; and Uncertainty explained 1.8% of the 16.5% explained variance. Though the variables Power Distance and Collectivism were also highly correlated to the Pragmatist learning style, they did not produce significant semi-partial correlations when the other variables in the equation were controlled for.

**Table 4: Pragmatist Learning Style Model Summary**

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .406 <sup>a</sup> | .165     | .153              | .4222                      |

<sup>a</sup>. Predictors: (Constant), Uncertainty Avoidance, Power Distance, Collectivism, Confucian, Masculinity

**Table 5: Pragmatist Learning Style OLS Regression**

**Coefficients<sup>a</sup>**

| Model |                       | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. | Correlations |         |      |
|-------|-----------------------|-----------------------------|------------|---------------------------|-------|------|--------------|---------|------|
|       |                       | B                           | Std. Error | Beta                      |       |      | Zero-order   | Partial | Part |
| 1     | (Constant)            | 1.714                       | .180       |                           | 9.539 | .000 |              |         |      |
|       | Power Distance        | 5.785E-02                   | .038       | .087                      | 1.519 | .130 | .214         | .080    | .073 |
|       | Masculinity           | 9.293E-02                   | .030       | .178                      | 3.092 | .002 | .244         | .161    | .149 |
|       | Confucian             | .114                        | .034       | .185                      | 3.348 | .001 | .318         | .174    | .162 |
|       | Collectivism          | 5.739E-02                   | .041       | .073                      | 1.403 | .161 | .172         | .074    | .068 |
|       | Uncertainty Avoidance | .102                        | .037       | .155                      | 2.789 | .006 | .201         | .146    | .135 |

<sup>a</sup>. Dependent Variable: Pragmatist

## Discussion

High Masculine (goal driven) beliefs (see Tables 3 and 5); High Confucian beliefs (see Table 5); High Uncertainty Avoidance beliefs (see Table 5) seem to be the cultural predictors of a Student-Driven learning preference. Therefore this suggests that students who hold a high rating of any combination of these cultural beliefs are more likely to have a Student-Driven learning preference. As expected, students who hold high Masculine or goal driven beliefs are more likely to prefer a less structured classroom setting as highlighted by Hancock et al. (2002), Hassall and Joyce (2001), and Webb (1997).

An interesting and yet an unexpected set of findings is that students who hold either high Confucian and or high Uncertainty Avoidance beliefs are also more likely to prefer a Student-Driven learning preference (see Table 5). This is unexpected as students with high Confucian and or Uncertainty Avoidance beliefs have been previously characterised as having a Teacher-Driven learning preference, which is a preference for more hierarchical relationships between students and teachers. These students expect teachers to guide as well as teach, as suggested by Chan (1999), Woodrow and Sham (1997; 1998), Biggs (1994) and Mohamad (1994). These findings although unexpected could be due to a student learning style adaptation process as has been recorded in other Australian based studies like Barron and Arcodia's (2002) and Volet and Renshaw's (1996). Therefore these students who hold high Confucian and or Uncertainty Avoidance beliefs may indeed be in the transition process towards a more Student-Driven learning preference. Students who hold a Student-Driven Learning Preference are highly likely to be a mix of domestic and international students. These students could also be more likely to reduce the subject materials to ensure that they are able to reproduce the information at a later date (Hassall and Joyce 2001). These students may also be highly motivated by subject assessments and hence only focus upon materials and areas where marks are allocated.

There does seem to be a link between students' cultural values and their preference for a Student-Centered Learning style as alluded to by Biggs (1994). This is an interesting finding as what constitutes good learning in the past has been described as a sense of deep or Teacher-Driven learning preferences (Biggs, 1994). This has the normative view that students should use abstract conceptualisation frameworks to interpret and analyse outcomes (Hassall and Joyce, 2001). Other normative positions about good learning include teachers varying their teaching methods and focusing on student-centeredness (Biggs and Moore 1993), and universities needing to respond to the learning styles of different students (Chan and Drover, 1997). It is highly likely that gauging good learning as suggested earlier (Biggs and Moore, 1993; Biggs 1994; Chan and Drover, 1997; Hassall and Joyce, 2001) is indeed influenced by students' preferences towards a Student-Driven Learning approach, and in turn the Student-Driven Learning Preference is influenced by students' cultural values.

A possible reason for this is that students who reach a tertiary level have been successful in the teaching environment they have studied in and may prefer to have a continuation of the environment they are used to. Therefore if this assumption is correct, Universities need to be aware of their student mix within a classroom setting to ensure appropriate motivations and stimulations are presented within their subject design.

## **Limitations**

As this study is an exploratory cross-sectional one this research is unable to gauge any changes in business students' Student-Driven Learning Preference over time. The unexpected findings of high Confucian and Uncertainty Avoidance cultural beliefs predicting the Student-Driven learning preference may indeed highlight a new concept about the student adaptation and learning process, although longitudinal studies that examine students learning preferences over time are needed. This study also only focused on one Australian University with campuses located in Australia. Studies that examine students longitudinally and use multiple campuses are also needed. Hopefully this study has identified some variables worthy of further examination.

## **Implications**

Students who prefer the Student-Driven Learning Preference may have the potential to diminish Teacher or even Subject Evaluations if a Teacher-Driven Approach is applied to challenge students' understanding and knowledge. With the ever increasing issue of quality assurance within the higher education sector and the globalisation of the industry, educators may need to be more sensitive to a Student-Driven Learning Preference if they are to receive favourable student evaluations of teaching.

There are also two other challenges that educators face within this globalised tertiary education sector. First, it is becoming more and more difficult to assess student populations' learning style preferences based upon residential status (domestic versus international students). Second, student based evaluations may not clearly reflect

students' learning preferences as low satisfaction levels in teaching or subject evaluations may be due to a learning style mismatch.

## **Conclusion**

This study has found that any combinations of high Masculine, Confucian or Uncertainty Avoidance beliefs are the indicators of the Student-Driven learning preference. As expected, students who hold high Masculine or goal driven beliefs are more likely to prefer a less structured classroom setting as highlighted by Hancock et al. (2002), Hassall and Joyce (2001), and Webb (1997). The unexpected and surprising finding was that high Confucian and high Uncertainty Avoidance beliefs were also characteristics of the Student-Driven learning preference as these students have been previously described as having a Teacher-Driven learning preference (Biggs 1994; Mohamad 1994; Woodrow and Sham 1997; 1998; Chan 1999). This could be masking a student adaptation process towards learning as highlighted by Barron and Arcodia (2002) and Volet and Renshaw (1996). That is students increasingly become pragmatic in their learning and become assessment driven. Therefore educators need to assess a classroom learning style mix cautiously as domestic and international student status may not be fine grained enough to establish whether their classroom is Student-Driven or Teacher-Driven and commonly held assumptions may be misleading.

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