

Towards a Culturally Sensitive and Deeper Understanding of “Rote Learning” and Memorisation of Adult Learners

Journal of Studies in International Education
15(2) 124–145
© 2011 Nuffic
Reprints and permission:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1028315309357940
<http://jsie.sagepub.com>



Po-Li, Tan¹

Abstract

This article aims to provide evidence that “rote learning” or “memorisation” is a complex construct and is deeply embedded in the East Asian culture. An in-depth understanding of this learning approach is increasingly crucial considering the complex demography of contemporary higher education nowadays. Not only is there a rise in the number of matured adult learners but also there is an increase in the number of international students (in particular students from the East). Despite the widening participation, there is an appalling lack of awareness of cultural differences in learning and teaching in Western higher education. International students from the Eastern cultures are often frowned at as ineffective rote learners. The current study, which adopted a culturally sensitive framework, provides verification that when adopting a memorisation approach, learners from the Eastern cultures could learn beyond “rote.” About 1,000 Malaysian Malay and Chinese adult learners who were engaging with professional development were involved in the current study. The data in the current study provides insightful evidence that when memorisation is a culturally ingrained approach, it can lead to deep understanding, even for nontraditional students like the adult learners.

Keywords

deep culture, memorisation, rote learning, middle-way philosophy, Confucianism, adult learners, professional development, East Asian learners, Malaysia

First, this article describes the recent demographic scenario of higher education (HE) and argues that the existing learning theory for HE is limiting in understanding the

¹King’s Learning Institute, King’s College London, 5.19, Franklin-Wilkins Building, Waterloo Bridge Wing, London SE1 8WA

current changes. It then argues that a deeper understanding on one of the learning constructs—“memorisation” from a culturally sensitive perspective could help bridge the “gap” in the current theory. The article then provides concrete evidence and discusses the findings in relationships to deep cultural East Asian values and philosophy.

The Changing Demography in the Western HE: How Prepared Are We?

This article aims to provide evidence that “rote learning” and “memorisation” is complex and deeply embedded in the Eastern culture. An in-depth understanding of *this* learning approach is crucial considering the changing demography of HE. The process of globalisation has accelerated internationalisation of HE, more notably at Western universities. Over the last decade, there is a constant increase in the number of international students at the Western universities, in particular students from non-European countries. In the United Kingdom in 2007–2008, there were 45,355 Chinese students from the People’s Republic of China, 9,700 Hong Kong Chinese students, 25,905 Indian students, and 11,730 Malaysian students. East Asian students are one of the most rapidly expanding groups (United Kingdom Council for International Student Affairs, 2006/2007). Another dominant demographic change in the universities is the influx of nontraditional students—adult learners¹ who made up of nearly 50% of the postgraduate studies at universities. According to a report from the Higher Education Statistics Agency (HESA, 2007) of the United Kingdom, there were 45.7% of adult learner entrants (who had no previous HE qualification) to full-time first-degree courses in 2006/2007. Most of these students would have had work experience when they enrol in undergraduate or postgraduate studies in the HE. Sir Muir Russell (2008), the vice president of Universities United Kingdom (UUK) has cautioned that “understanding demographic trends is the key to the survival of universities over the next two decades” (p. 24). Their findings project that there will be a sharp fall in the number of 18- to 20-year-old, but a moderate increase of older age groups up to 2,019 across the United Kingdom. It is anticipated that not only will the number of international students increase from the current 10% at the end of the prime minister’s 5-year plan to 70,000 by the year 2010 (The Prime Minister’s Initiatives, n.d.) but also the majority of these international students enrolled in the postgraduate studies would be adult learners with work experience.

Considering the demographic changes in HE, ideas like the notion of *supercomplexity* (Barnett, 2000) has emerged. Barnett (2000) argued that curricula in the U.K. HE has not been extensively studied and those studies that exist are becoming outdated and fail to keep up with the rapid changes at the universities. One key question raised is “to what extent are institutions responding to change?” The complexity of HE, intensified by the influx of students from diverse social and cultural background, has led to discussions on multicultural teaching and learning resources for preparing future teachers in HE (Alexander, 2007). With hindsight, it is not surprising that the call for

changes in HE raised the critical issue of whether current theory on teaching and learning models adopted by the U.K. HE is adequate for improving the quality of teaching and learning in the United Kingdom.

The Student Approaches to Learning and the Current HE Context

One of the dominant theories which has a significant influence on HE in the United Kingdom for decades is Students Approaches to Learning (Case, 2007; Haggis, 2003) initiated by Marton and Saljo (1976). Briefly, approaches to learning argues that there are two broad, generic approaches to learning—surface approaches (SA) and deep approaches (DA) to learning. There is also a third controversial “achieving” approaches extended by Entwistle and Ramsden (1983) and Biggs (1987) but which was later removed by Biggs, Kember, and Leung (2001) due to psychometric reasons (see Table 1 for explanation on the constructs). However, literature on adult learners (Knowles, 1990) and learners from Eastern cultures (Biggs & Watkins, 1996) has provided compelling evidence that these learners are strategic and learning is often viewed as a means to an end and hence the “achieving” construct is relevant in the current study—the Malaysian adult learners context. In short, this learning model suggests that the ultimate aim of learning is for students to engage with DA to learning (such as linking concepts and be critical to new concepts/knowledge learned) and to be discouraged from SA to learning (such as recalling of information or rote learning).

The subconcepts such as Deep/Surface Motives, Deep/Surface Strategies and Career Motive/Achieve Motive (CM/AM) developed from this theory have been used to design instruments such as Student Process Questionnaire (see Biggs, 2003 and Ramsden, 2003, for detailed explanation). Not only have these instruments been administered to understand the relationships with other concepts such as age (Biggs, 1987; Zeegers, 2001), assessments (Biggs, 1987; Zeegers, 2001), socioeconomic status (Zhang, 2000), self-esteem (Watkins, 2001), self-regulation (Watkins, 2001), thinking skills (Zhang & Sternberg, 2000) but also have they been extensively used on learners from different cultural backgrounds (Volet, Renshaw, & Tietzel, 1994; Watkins & Ismail, 1994; Watkins & Reghi, 1991; Zhang, 2000). The results of the wide-ranging use of the instruments points to the lack of rigour of approaches to learning theory in understanding the complexity of current learners in HE (Kember, Wong, & Leung, 1999; Tan, Pillay, & Fiona, 2004). In retrospect, whilst cultural factors are not evident in the Student Process Questionnaire—original version (SPQ), Biggs (1990) has persistently argued that cultural values have significantly influenced the learning processes. In fact, one of the key limitations of this instrument is the lack of cultural consideration when arguing learning approaches adopted by the diverse learners in HE (Kember et al., 1999). The present article draws the attention to one central learning approach adopted by learners from the Eastern culture—the memorisation approach to learning.

Table 1. Scale, Example of Item, Number of Items, Cronbach's Alpha, SRMS, CFI

Scales	No. of items	Cronbach's alpha
R-SPQ-2FM		
DA	12	.84
Example	I find that at times studying gives me a feeling of deep personal satisfaction (Item 4) I find most new topics interesting and often spend extra time trying to obtain more information about them (Item 8)	
CM/AM	5	.80
Example	I am at the university because I feel that I will be able to obtain a better job if I have a higher academic qualification (Item 1) I see further education is for me and my family, a good way to get a better job (Item 5)	
SA	8	.75
Example	I do not find my study very interesting so I keep my effort to the minimum (Item 10) I see no point in learning material, which is not likely to be in the examination (Item 22)	
U&M	4	.74
Example	I repeat many times so that I can understand (Item 30) Repetition helps memorising by creating a deep impression (Item 23) I learn something by rote, going over and over them until I know them by heart even if I do not understand them (Item 9) Repetition plus "attentive effort" can lead to new meaning (Item 29)	
SRMR = 0.0348		CFI = 0.966

Note: SRMS = Standardized Root Mean Squared Residual; CFI = Comparative Fit Index; R-SPQ-2FM = Revised-Study Process Questionnaire-2 Factor Malaysia; DA = Deep Approach; CM/AM = Career/Achieve Motives; SA = Surface Approach; U&M = Understand & Memorising.

The Limiting Students Approaches to Learning—Current HE Context

In light of the transformation in HE, there is a call for an alternative theoretical framework to complement or substitute the current dominant learning theory. When critically examining the approaches to learning theory, Haggis (2003) highlighted the narrow perspective of approaches to learning theory in "governing" the learning and teaching in HE in the United Kingdom. Whilst this grand theory, that is, student approaches to learning, "may be successful in creating a generalised description of the 'elite' goals and values of academic culture (such as advocating DA—the emphasis of criticality in approaching knowledge, [added by author]), it says surprisingly little about the majority of students in a mass system" (p. 89). Such criticism is more salient in the

current context when there is a widening demography in HE, where the majority of the students come from the diverse “minority” cultures. These “minority cultures” (international students or adult learners in the current context) are being measured up with the “elite” culture (in the U.K. context, this means the Western Aristotelian—inquiring and critiquing learning culture) expected by the HE. The “elite” goals and values of academics are for students in HE to engage with DA to learning—displaying deep motives and strategies. However, it is argued that the majority of students continue to engage with surface learning and that changing approaches is complicated and developmental. Research currently has constructed approaches to learning model which is based on a set of elite values, attitudes, and epistemologies that make more sense to HE’s “gatekeepers” than they do to many of its students. Learners who do not “comply” with the deep-learning idealism are diagnosed as “problematic” and need to change, to improve to meet the grand HE agenda. Haggis (2003), for example, has argued that deep learning is a set of highly complex cognitive operations and takes many years to learn. The small number of deep learners who succeed in performing according to the “elitist” HE agenda either have acquired the skills and ability to perform in the way that is desired, or at least are compliant in shaping towards this direction. The majority of students, in particular nontraditional adult learners and students who come from minority cultural backgrounds, are often sidelined and their voices and “learning approaches” are not considered in this learning and teaching model. Very often, the richness of their previous experiences and cultural learning approaches are downplayed or even disregarded. The approaches to learning model has also not been explicit in describing the intensity required and that “academically unsuccessful students do not just exhibit ‘poorer’ approaches to studying but fail to exhibit any coherent approaches at all . . . poor academic performance appear to be associated with a disintegration or fragmentation of the normal patterns of studying” (p. 99).

In a similar vein, Case (2007) suggested the theme of alienation and engagement as an alternative perspective for characterising the student experience of learning in the HE. Congruent with Haggis (2003) who argues that students’ diverse voices are not considered in the existing model of learning, Case suggests that the preexisting discourse of HE (in particular Western universities who have been receiving massive number of international and adult students) places many students in “fixed” ways, and these ways constraint their dominant learning behaviour they have internalised from their previous experiences and learning culture. The above set ways have further subjugated and disempowered these students when they are placed in subservient power relationships to lecturers, and there is barely any freedom for negotiation or empowerment. Case (2007) has characterised learning in the HE as the acquisition of specialist knowledge and argued that the discourse that university learning require students to acquire will often be in conflict with more experiential discourses that students have acquired in their previous work or social cultural community. Very often, gaining of the specialist knowledge involves some personal loss, leading to the consequence of these students not only losing some of the implicit experiential knowledge but also not fully engaged with the new HE learning environment. Echoing

the disempowerment and losing identity of students is the work by Leach, Neutze, and Zepke (2001), who argued that the current dogmatic traditional assessment practices has disempowered learners in the HE as a result of subtle ways of exerting power over students on what knowledge is essential to be assessed or how it should be assessed. "To impose a unitary view of near-objectivity on the assessment process, is to required the learner to conform to the reality of the assessor" (p. 296). Thus, if assessment in HE values specialist discourse and set the students against the experiential or personal discourse, they argue that the students may eventually choose alienation as a strategy for self-preservation and may simply not engage at all (Case, 2007). One of the evidence of students not engaging is student dropout rate. The recent statistics released by HESA, on "percentage of mature entrants to full-time first degree courses in 2005/06 who are no longer in HE in 2006/07" revealed that 20.2% of mature students without previous qualification failed to complete the degree course (HESA, 2007).

This article argues that one learning approach which is culturally embedded but contradicting to the current "elitist" deep meaningful critiquing approach is "memorisation."

Asian Learners as Passive Learners and Rote Learners

Asians learners have been viewed by Western educators as passive (M. C. Mok, Kennedy, Moore, Shan, & Leung, 2008) and unproductive rote learners (Biggs, 1996; Helmke & Tuyet, 1999; Kingston & Forland, 2004; I. Mok et al., 2001; Renshaw & Volet, 1995). In fact, Emeritus Professor of general linguistics at the University of Oxford, Prof. Roy Harris has recently remarked that "Nor is it a coincidence that rote learning, currently held in contempt most by European teachers, is still highly valued in the Far East" ("Barbarous Scratchings," 2008). Such denigration of the Far East learners' rote-learning approach can become bewildering when international tests results were analysed and compared. Despite being labelled as passive, surface learners using low cognitive strategies such as rote learning, East Asian learners from Singapore, Japan, and Hong Kong outperformed many students in the United States in international tests such as the TTIMS—The Trends in International Math and Science Study (Bempechat & Drago-Severson, 1999; I. Mok et al., 2001). In addition, a recent study by M. C. Mok et al. (2008) which adopted culturally sensitive approach revealed that secondary Chinese schools learners from Hong Kong, Macau, and Taiwan ($n = 23,563$) were not passive learners as they constantly seek help to solve learning difficulties.

It was highlighted by Biggs (1990) that the high performance of the Chinese students at the University of California was so significant that the university had to implement a negative discrimination process. This meant that the culturally Chinese applicants had to score higher than the other cultural groups to gain admission to many of the high-priority courses. This was implemented to avoid hugely unbalanced number of Chinese students in the university.

Cross-cultural studies using SPQ comparing Eastern and Western learners have, to a certain extent, dispelled some of these myths and paradoxes mentioned above

(see Bempechat & Drago-Severson, 1999; Biggs, 1990; Kember, 1991; I. Mok et al., 2001; M. C. Mok et al., 2008; Niles, 1996; Watkins & Ismail, 1994; Watkins & Reghi, 1991). These studies argued that Asian learners may not be rote learners. Rather, some of these studies even established that Asian learners use deep and achieving approaches more than their Western counterparts. For instance, Volet et al. (1994) found East Asian learners keener to adopt achievement strategies than Australian learners and performed better in academic examinations. Even though the data from these SPQ-based studies have initiated doubts about the learning processes and ability of Asian learners (Kember et al., 1999), they did not provide explanations to the puzzling issue of how these Asian learners can rote learn and yet use deep and achieving approaches concurrently.

“Rote Learning” or “Memorisation”

Studies which adopted a qualitative approach of SAL (i.e., an emic approach, culturally specific approach) to understand the construct “memorisation” as a learning strategy have uncovered further indigenous aspects of memorisation adopted by Eastern learners—evidence which was not identified by SPQ-based studies (Dahlin & Watkins, 2000; Kember et al., 1999; Marton, Dall’Alba, & Kun, 1996; Marton, Watkins, & Tang, 1997; Purdie & Hattie, 2002). These studies provided some insights that learners with Confucian background do not view memorisation and understanding as two distinct dichotomies. Rather, the dividing line for them is between mechanical memorisation (rote learning with no understanding) and memorisation in order to achieve understanding (Kember et al., 1999; Marton et al., 1997). Kember et al. (1999) argue that there may be even further differentiation of the concept of memorisation among the Hong Kong Chinese learners. They reported different stages of memorisation, namely, “memorise with little understanding,” “memorise to understand,” and “understand and memorise.” There has also been argument on the interplay of memorisation and understanding and that the complexity of these two concepts made them difficult to be detached (Entwistle & Entwistle, 2003).

However, it is unclear if mature adult learners from the East Asian culture (who represent a significant proportion of university demography now) would display such varied conceptions on memorisation and repetitions due to their dominant cultural influence? There are two issues to be considered. First, research on memory and aging has been criticized for its generalisability and historical and cultural bias (Merriam & Caffarella, 1999). Thus, researching memorisation and adult learners in the Malaysian context should be interesting and hopefully providing nonbias outcome. Second, past and current literature on school children and young adults indicates that cultural factors have a strong influence on the conceptions of “repetition and memorisation,” indicating that memorisation can also lead to deep understanding. Senior secondary and university undergraduate students are close to adulthood but they may not have the added responsibility and experience of work and family like adults (Hofstede, 1991). It is possible that Asian adult learners, in particular East Asian adult learners from Confucian background or non-Confucian background (i.e., Malays), may be more

likely to adopt similar learning approach to enhance deep understanding despite their age. In addition, much of our understanding of adult learners indicates that they are mostly motivated by internal factors and hence are more likely to adopt DA (see Biggs, 1987; Richardson, 1995; Zeegers, 2001, 2002). If deep understanding can be achieved by repetition and memorisation in some cultures, then adult learners from these cultures may prefer to adopt culturally embedded approach despite being slowed down by deteriorating age and memory ability as suggested by literature. If that is the case, it implies that cultural factors may be a fundamental influential moderating variable than age factors in influencing a learner to adopt a “repetition and memorisation” strategy.

In short, globalisation has driven changes at HE. The complexities in HE has led to the current debate on learning theory underpinning the teaching and learning in HE and its limitation in conceptualising and addressing the changes in HE. This article provides evidence that “memorisation” learning approach which has often been downplayed by the Western HE could “bridge” some of the gaps of the current learning debate.

Method and Research Questions

In response to the “gap” in approaches to learning, an *adapted* version of SPQ—Revised-Study Process Questionnaire-2 Factor Malaysia (R-SPQ-2FM) which considered both “epic” (universal characteristics—DA vs. SA to learning) and “emic” (culturally specific characteristics—Understanding & Memorising (U&M) approach) learning concepts was used to investigate the Malaysian adult learners’ learning processes. Hence, it provides concrete evidence using a cross-cultural sensitive approach to capture one critical aspect of the cultural influence of learning in HE—the memorisation approach.

The quantitative study is set in a multicultural context, that is, Malaysia, where majority of the population is made up of Malays (65%) and Chinese (23%). The aim is to demonstrate that rote-learning and memorisation approach is complex and deeply embedded in the East Asian culture. The specific research questions are as follows:

Research Question 1: Do Malaysian adult learners adopt memorisation approach to learn?

Research Question 2: If yes, is memorisation approach adopted a DA (which can lead to understanding) or SA (as argued by the literature) or both?

Research Question 3: Are there any differences in the adoption of memorising approach by Malay (non-Confucian background) and Chinese adult learners? If yes, what?

Instrument Development—Adaptation of R-SPQ-2FM

First, suitable “etic” items were initially selected from SPQ (Biggs, 1987) and Revised-Study Process Questionnaire-2 Factor (R-SPQ-2F; Biggs et al., 2001) based on face

and content validity. Second, new “emic” items, which form the CM (this scale was included based on theoretical underpinnings of adult learning theory and Asian learners) and U&M subscales, were added in the instrument development process guided by the literature (see Dahlin & Watkins, 2000; Kember et al., 1999; Watkins & Biggs, 1996) and adult learning contexts in Malaysia. The 43 items were initially grouped into 7 subscales—Deep Strategy, Deep Motive, Understanding & Memorising, Achieve Motives, Career Motives, Surface Strategy, and Surface Motive (see Kember et al., 1999 and Table 1).

R-SPQ-2FM (the English version) was not translated as they are direct, behavioural information questions (Behling & Law, 2000). Most of the graduate programmes in Malaysia use English as a medium of instruction, and hence the adult participants in this research are proficient in the English language. However, many words and idiomatic expressions were changed and adapted to local colloquialism, with the aim of increasing familiarity (Hinkin, 1998).

Sample

Stage 1—The Pilot Study

One hundred and one adult learners from the Klang Valley in Malaysia participated in the preliminary Stage 1 study. These were adult learners who were engaging with professional development programmes either full-time or part-time in formal settings (i.e., university) and hence are representative of the population of interest. The sample comprised 52.5% Malays, 47.5% Chinese, and 73% females. Participants ranged in age from 21 to 51 and above and majority fell into the age range of 21 to 40. Sixty-one percent participated in full time study, and 72% were studying in a master’s programme.

Stage 2—The Main Study

The main sample was used for the Stage 2 analysis of the instrument development. A similar demographic sample was involved. The sample consisted of 858 participants, which comprised 62% Malays and 38% Chinese. There were 59.1% females, and 83.9% of the participants ranged in age from 21 to 40. Seventy-five percent of them participated in part-time study, and 71.4% of them were engaged with continuous development programmes (e.g., ACCA, Diploma in education).

Validation of Instrument and Analyses of Data

Two main stages involved in the validation of R-SPQ-2FM. As the questionnaire was extensively adapted to be culturally sensitive for Malaysian adult learners, authors like Floyd and Widaman (1995) argue that exploratory factor analysis (EFA) needs to be carried out first followed by confirmatory factor analysis (CFA) for a rigorous

refinement of the instruments.² Descriptive analyses, correlations, and multivariate analysis of variance (MANOVA) were carried out to calculate the means and relationships of the constructs using SPSS version 11. CFA modelling also provides robust causal relationships of the constructs using Analysis of Moment Structure (AMOS).

Results

To address Research Question 1, EFA followed by CFA were carried out to see if U&M scale was rigorous and valid. EFA (performed with Varimax rotation and factor loading of >0.55) shows that the factors extracted which concerned the purpose of this study are valid and reliable. Table 1 shows that DA has 12 items, CM/AM has 5 items, SA has 8 items, and U&M has 4 items. The reliabilities found are $\alpha = .84$, $\alpha = .8$, $\alpha = .75$ and $\alpha = .74$, respectively.

DA in the current study combines items of Deep Motive and Deep Strategy scales of SPQ and R-SPQ-2F, congruent with findings on other Malaysian secondary students (Watkins & Ismail, 1994). More important, the U&M scale which was significantly extracted in this study supported Kember et al.'s (1999) proposal to include cultural sensitive scale such as memorisation, in particular when East Asian learners with Confucian background are involved.

Results of CFA-Stage 2 Analysis

Confirmatory factor analysis would reaffirm the construct validity of U&M Scale for Malaysian adult learners. The testing of the model for R-SPQ-2FM was guided by theoretical underpinnings of approaches to learning, including arguments presented by Kember et al. (1999). For analysis derived from maximum-likelihood (ML) and also to reduce sensitivity to distribution, Hu and Bentler (1998) recommend using a two-index strategy to evaluate Standardized Root Mean Squared Residual (SRMR) and Comparative Fit Index (CFI). This strategy has been shown to control both Type I and Type II errors (Kember, Biggs, & Leung, 2004). A good fit is indicated by $CFI > 0.95$ and a $SRMR < 0.08$. These indexes are also used in other SPQ-related studies (see Biggs et al., 2001; Kember et al., 2004), thus making comparison feasible.

The tested higher order model with standardized paths for R-SPQ-2FM is illustrated in Figure 1—containing two higher order latent variables, named as Meaning Orientation (ME) and Reproductive Orientation (RE). Each latent variable is corresponded to the indicators (i.e., DA) which comprise the subscales or factors (their means) extracted in Stage 1 by EFA. For this model, $SRMR = 0.0348$, and $CFI = 0.966$, which indicate quite a good fit to the data. All the paths from the constructs to the items were significant at 5% level or better (see Table 1). The standardized path coefficients range from 0.17 to 0.79, indicating that the items are good indicators of the four constructs/scales. A low positive correlation (0.18) was observed between meaning and reproduction latent variables, suggesting that there is consistency with the current findings and arguments of Kember et al. (2004) and Kember et al. (1999) studies. The two-stage analysis

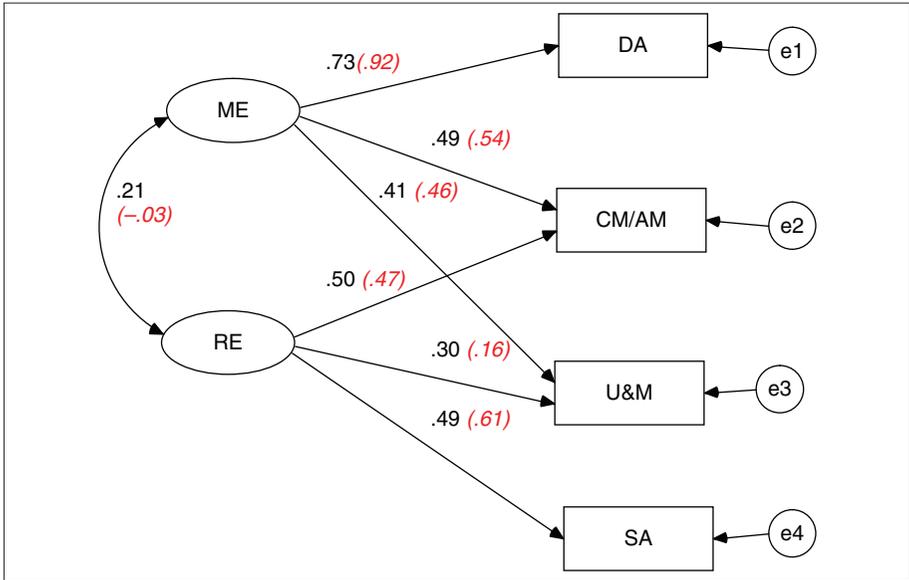


Figure 1. Modelling-learning approaches of Malays & Chinese

Note: (i) Observed variables: DA = Deep Approach; CM/AM = Career Motive/Achieve Motive; UM = Understand & Memorising; SA = Surface Approach. (ii) Latent variables: ME = meaning orientation; RE = reproductive orientation; (iii) Measurement errors: e1 to e4. Single headed arrows represent regression paths and are notated with standardized path coefficients; double arrows represent covariances and notated with correlation coefficients; rectangular boxes represent observed variables and ellipses represent unobserved or latent variables. (The alpha values of the Chinese model are represented in italics and in parentheses.)

provided convincing evidence that U&M is a key learning construct in understanding approaches to learning of Malaysian adult learners. As U&M scale has been strongly established, the next analysis is to address Research Question 2.

To address Research Question 2, the correlations of the four constructs were investigated using Pearson product-moment correlation coefficient. Essentially, there are statistically significant positive correlations between all the constructs. Significant correlation coefficients ranged from the strongest correlation between DA and CM, $r(858) = .45, p < .05$ to the weakest correlation between DA and SA, $r(858) = .12, p < .05$ (see Table 2).

The most interesting correlation is that U&M has statistically positive correlation with both DA and SA constructs. However, the intriguing findings are the weaker relationship between SA and U&M, $r(858) = .23, p < .05$, and strong positive significant correlation between DA and U&M, $r(858) = .41, p < .01$. Such paradoxical data throw hints that the approach of repeating/memorise relate strongly to DAs and less to SAs to learning.

Considering the above findings, the next logical step is to investigate whether there is any difference in the correlations of the Malay and Chinese cultural groups.

Table 2. Correlations Analysis of the Four Constructs Investigated

Subscales	DA	SA	U&M	CM/AM
DA	—	0.12**	0.41**	0.45**
SA		—	0.23**	0.39**
U&M			—	0.32**
CM/AM				—

Note: DA = Deep Approach; SA = Surface Approach; U&M = Understand & Memorising; CM/AM = Career/Achieve Motives.

**Correlation is significant at the 0.05 level (2-tailed).

Table 3. Testing the Statistical Significance of the Differences Between Correlation Coefficient for Malay and Chinese Cultural Groups

Correlation of subscales	z scores Malay	z scores Chinese	Observed value of z
DA/U&M	0.4	0.448	-0.679
SA/U&M	0.288	0.141	2.082 ^a
CM/AM/UM	0.4	0.261	1.968 ^a

Note: DA = Deep Approach; U&M = Understand & Memorising; SA = Surface Approach; CM/AM = Career/Achieve Motives.

a. The coefficients are statistically significantly different if $z_{obs} \leq -1.96$ or $z_{obs} \geq 1.96$.

To address Research Question 3, Pearson product-moment correlation coefficients were first calculated independently for Malay and Chinese adult learners. However, to investigate whether there is statistically significant difference between the correlation coefficients of the two cultural groups, Pallant (2001) suggests converting the r scores to z scores, then using an equation to calculate the observed value of z (z_{obs} value) or commonly known as Fisher's z transformation.

The analysis found significant difference between the *strength* of correlation of SA/UM and CM/AM / UM for Malay and Chinese cultural groups but not for DA/UM (see Table 3).

The z value indicated that there is a significantly higher correlation between CM/AM and U&M for Malay adult learners, $r(532) = .38$, $p < .01$, compared to their Chinese counterparts, $r(326) = .26$, $p < .01$. Such a pattern emphasises that if the motives of the learners are career-orientated or grades-orientated, Malay adult learners are more likely to adopt memorising approach to achieve their motives. The data also suggests that when Malay adult learners use U&M strategies, the more likely they are to adopt SAs, $r(532) = .29$, $p < .01$, compared to their Chinese counterparts, $r(326) = .14$, $p < .01$, forming a probable relational pattern of CM/AM→U&M→SA for Malay adult learners.

Item analysis on U&M Scale, "I learn something by rote, going over and over them until I know them by heart even if I do not understand them" (Item 9), between Malay and Chinese adult learners signified that the Malay adult learners scored significantly

higher mean for this item, Malay, $M = 3.13$, $SD = 1.01$; Chinese, $M = 2.61$, $SD = 1.16$; $t(858) = 6.97$, $p < .001$. This reaffirms the relational pattern $CM/AM \rightarrow U\&M \rightarrow SA$, suggesting that Malay and Chinese adult learners may engage with memorisation approaches differently. In this case, the memorisation approach adopted by the Malay adult learners may be less helpful in enhancing deep learning as advocated by Biggs (2003), whereas the memorisation approach adopted by the Chinese adult learners is more likely to be a DA.

Even as Pearson product–moment correlation analysis is valuable in describing the strength and direction of the linear relationship between two variables (Pallant, 2001), it is limiting in establishing the strength and causal relationships of a series of multiple relationships simultaneously. However, having established that (a) there are correlations between U&M with both DA and SA and (b) there are significant differences in the correlation coefficients between the Malay and Chinese cultural groups, SEM carried out based on theoretical justification may be a more rigorous and holistic tool to address the complicated causal relationships (Hair, Anderson, Tatham, & Black, 1995). Please see Figure 1 for the following discussion.

One of the most significant observation of the model in Figure 1 is the paths, $RE \rightarrow U\&M$ and $ME \rightarrow DA$. For the Malay cultural group, the RE latent variable has a stronger causal effect on U&M, with a higher β value ($RE \rightarrow U\&M$, Malay $\beta = .30$, $p < .01$; Chinese, $\beta = .16$, $p < .01$). However, the Chinese adult learners who adopt ME display a stronger positive causal effect on DA ($ME \rightarrow DA$, Chinese $\beta = .92$, $p < .01$; Malay, $\beta = .73$, $p < .01$). The path reiterates the notion that Malay learners who are reproductive orientated are more likely to adopt memorisation approach. It is plausible that the Malay adult learners, when adopting memorising approach, is more likely to be SAs to learning, that is, rote memorisation with no understanding.

MANOVA analysis was carried out to explore whether there were statistically significant differences between the Malay and Chinese cultural groups (independent variable) caused by the seven moderating variables (e.g., gender, age, work experience, and level of courses studied) and the effect size of such moderating effect on the four factors (dependent variables): DA, SA, CM/AM, and U&M approach in a combined score. However in this article, only the effects of “level of courses studied” (ranging from PhD, master’s, to short/long continuous professional development/studies such as ACCA, diploma in education) were reported as they are pertinent analysis related to U&M (see Table 4).

The “level of courses studied” moderating variable shows some interesting results when considering U&M approaches to learning. For Malay adult learners, there is a significant difference on the effect of this moderating variable on the U&M approach, but such a result is not evident for the Chinese adult learners, Malay: $F(3, 532) = 12.49$, $p < .001$, $\eta^2 = .06$; Chinese: $F(3, 326) = 3.37$, $p > .05$, $\eta^2 = .03$. The Malay adult learners who undertook a PhD adopted the least U&M approach ($M = 2.95$) while those who engaged with short continuous professional development adopted the most U&M approach ($M = 3.75$). It is interesting to note that Chinese adult learners across all courses adopted U&M approach but with no significant differences in

Table 4. Effects of Seven Moderating Variables on Factors of Approaches to Learning for Malay and Chinese Adult Learners with MANOVA

Moderating variables	Combined dependent variables (DA, SA, CM/AM, U&M)				
	Pillai's trace	df	F	η^2	p value
Level of courses					
Malay	.23	12	10.75	.076	<.001 ^a
Chinese	.19	12	5.24	.88	<.001 ^a

Note: MANOVA = multivariate analysis of variance; DA = Deep Approach; SA = Surface Approach; CM/AM = Career/Achieve Motives; U&M = Understand & Memorising.

a. Significant results.

the mean scores regardless of the level of courses they undertook, unlike their Malay counterparts.

Discussion

Current debates on the changes in HE has undoubtedly questioned the appropriateness of the learning theories developed from the Western perspectives. Though “memorisation as a learning approach” has been put in contempt by many Western educationists, this study reveals that indigenous conceptualisation of the construct “memorisation” from the perspective of the East Asian adult learners differs from the perspective of the Westerners. Such evidence adds credence to the debates by authors like Watkins and Biggs (1996; I. Mok et al., 2001) on Chinese learners—who have persistently argued that Chinese learners have been “misconstrued” when perceived from the Western educational theory and philosophy.

First, the narrow conceptualisation of memorisation, that is, rote learning which leads to nonlearning, does not help to fully appreciate the current learning complexities of HE. Memorisation perceived from the East Asian culture is more than just rote learning. Memorisation can transcend to the level of understanding and meaningful learning, even in the context of adult learners. The cognitive processes of memorising seem more intricate than what has been understood. This approach is one of the key approaches favoured by Malaysian adult learners, in particularly the Chinese learners, regardless of the level of study they engaged with. It may be plausible to suggest that despite their age, these Chinese adult learners generally may be more likely to adopt a culturally innate approach to enhance learning. In this respects, the Chinese-educated Malaysian Chinese would have a stronger inclination to memorise to understand; as one of the effective means of learning the Chinese language characters is to practice repeatedly and memorise the Chinese characters and the four-character Chinese idioms.

The finding in this study that memorisation, which can be a deep-learning approach, concurs with the argument by Tang (1993) on deep memorisation adopted by her Hong Kong Chinese students. She argues that *deep memorisation* is a concept which

occurs intuitively and naturally by many Chinese students but not for Western learners. Dahlin and Watkins (2000) also pointed out that whereas their Hong Kong secondary students appreciate a memorisation approach to learning, their German counterpart tended to downplay “memorisation approach” and perceived this learning approach with a negative light. Similarly, Kember (1996) argued that there are four levels of memorisation adopted by Hong Kong Chinese students.

The question raised is “how could one memorise and understand simultaneously?” Perhaps an appreciation of deep cultural values could provide powerful insights to understand memorisation as an effective learning approach.

U&M Approach: Insights from Deep Culture—Language, Philosophy, and Cognition

Deep culture. Shaules (2007) argues that deep culture comprises elements of culture that function out of awareness; they are the hidden basic assumptions which include elements such as linguistic relativity and cognitive processes. It is very unusual for people to question the deep assumption behind their norms and values as they are highly abstract and operate at a deep-intuitive level. He advocates that it is crucial for those in cross-cultural situations to understand these unspoken assumptions that underlie the cultural dilemmas. Perhaps discussion on the concept of memorisation can gain insights from an appreciation of some of the hidden assumptions of deep culture below.

Language. Interesting insights can be gained if one dwells deeper into the Chinese language and culture. A renowned contemporary Chinese philosopher, Zhang Dongsun (Jiang, 2002), has argued that the form or the structure of language expresses the character and psychology of a nation or what he called “the way of thinking” (p. 72). If one considers the learning process of Chinese language compared to English, it is apparent that the Chinese written form consists of the ideographic form which represents meanings (pictograms, symbols, or ideogram) rather than the alphabetic form of English language which represents sounds (Tse, Marton, Ki, & Loh, 2007). Thus, every individual Chinese character would relate to a relatively distinctive meaning. To illustrate, 大 (da) means “big,” 天 (tien) means “sky,” 太 (dai) means “very,” but 太太 (dai dai) does not mean “very very” or “too much,” but it actually means “wife.” The Chinese characters may look similar but they depict dissimilar meanings, and they even sound differently. On the contrary, for alphabetic English language, mastering of the phoneme blending would enable most learners to form words as the systems and patterns are explicit (e.g., suffixes and prefixes, tenses) for learning the language (Tse et al., 2007). However, the Chinese learners have to put in unimaginable amount of effort to practise writing and memorising the characters in order to become relatively competent. It is believed that an ordinary Chinese has to learn about 2,500 Chinese characters to read newspaper of average difficulty, and some even claimed 4,000 to 5,000 characters for functional daily activities for well-educated adults. With years of repetition and memory work since childhood, it is not surprising that such intensive and tedious effort of memorisation has become a culturally and intuitively ingrained approach to learning.

The Chinese concept on memorisation “背诵” or “背” interestingly reflects the distinctive process/activity of learning. Breaking down the two characters, the closest English translation of “背” is “piggyback.” However, the word “背” has imbedded meaning of “effortful, load,” “respect and care” when piggybacking; while “piggyback” carries a more neutral connotation, it could even be a “fun” activity of piggybacking. The character “诵” means “to recite—a song or poetry” which can be fun and “as natural as well.” Hence, the Chinese word “背诵” comprises two opposing characters in meaning. Memorisation, which is a laborious and effortful process on the one hand, can be as natural and fun on the other—“like a song.” Ask any Chinese learner who has memorised the multiplication tables, he or she would relate to you the experience of effortful and yet learning them like “singing a song”!

The paradoxical denotation of “memorisation” of the Chinese learners can be further unpacked if the deep Chinese philosophy—the middle way philosophy—is extrapolated.

Chinese middle way philosophy (“中庸”). Whilst many people with Confucian background may not practice its organizational and Confucian institutional mechanisms anymore, researchers like Echter et al. (1998) found that certain Confucian values have in fact flourished among the overseas Chinese. These values still remain a very powerful force, forming part of the ways of life of many people from the Confucian background. In this sense, Confucianism as a value system is still functioning in today’s world (Cohen, 1996). In one of the lectures titled “Confucianism in a Globalizing World,” Confucianism scholar, Dr. Tu, argued for the relevance of Confucian values in the diversified globalized world. He maintained that the openness of Confucian philosophy has allowed the Chinese to supplement Western ideas with Confucian values (“Don: Confucianism Still Relevant,” 2004). Perhaps one very powerful Confucian value, which allows the practitioners to be “open and flexible” and which is still pervasively ingrained in the lives of many people with a Confucian background, is the middle way principles “中庸” (Chen, 2002). In an extensive literature review of the middle way principles, Chen (2002) has argued that the Chinese middle way philosophy stresses the importance of holism. It is a dynamic concept which calls for an active “harmonious integration” (p. 183) of opposites rather than a reactive compromise between them. The Chinese believe that all things in the universe contain competing tendencies that must be balanced and that the “Chinese mindset takes an integrative point of view, one that considers all things in term of their relationships, be they social, economic or biological” (Chen, 2002, p. 179). Examples of “perceived” paradoxical Chinese concepts are like “yin (阴) and yang (阳)” image and the Chinese word for “crisis”—危机. Similar to the Chinese 背诵, 危机, according to him, is made up of two opposing Chinese characters, 危, which means “danger,” and 机, which means opportunity. Underpinning the Chinese word “crisis”—危机—is the meaning of “having abundance of opportunity even in time of danger.” Hence, crisis is not perceived negatively but also with a positive prospect as well.

Thus, even in the social context of learning, memorising process can contain opposing affinity that can be balanced to become “laborious but fun” (背诵). Perhaps there is no distinct concretising or dichotomising of the concepts “rote memory” and “memory

with understanding” as both processes not only could be perceived as “conflicting extremes” but also are interrelated and can interweave ultimately to become a balanced learning process. This is evident in the positive correlation between ME and RE latent variable for the current study. The fluidity of the paradoxical memorisation learning processes is rather alien to many Western educators or learners and hence may have caused “bewilderment” among them. Such a perplexing response is not a surprise as the majority of the studies on learning have been investigated from the perspective of the Western model of learning (Leung, Ginns, & Kember, 2008; Vijver & Leung, 2000), without consideration of the culturally sensitive “emic” constructs/approach. Perhaps a Confucian middle way philosophy can provide insights into the conceptualization of the “intermediate approach to learning” favoured by the university Hong Kong Chinese students as compared to Sydney Western students, argued by Leung et al. (2008) in their study. They found that their Hong Kong sample tended to adopt both higher SA and DA to learning compared to their Sydney counterparts, indicating greater inclination to combine both SA and DA to learning. Although they did not identify their findings to the philosophy of middle way, they have named their finding as the “intermediate approaches to learning.” Interesting, the recent investigation of the Chinese students who were studying at the U.K. Western universities also adopt the “middle way” approach to harmonise the East and the West approaches to learning when challenged with the Socratic critical–argumentative approach to learning (Durkin, 2007).

Conclusion

This article has considered the changes in HE and argued that the limitation of current learning theory may benefit from understanding learning from a culturally sensitive perspective. The current study presents evidence that memorisation, which has been misconstrued from the Western perspective, is more than rote-learning.

As culture is one of the most complex concepts to study, unpacking the deeper cultural values, such the cultural philosophy and language, can enlighten some of the puzzling issues in memorisation as a learning approach. Empowering educators in HE with deep cultural knowledge on educational concepts and approaches would certainly benefit in addressing the complexity of pedagogy as a result of changing demography at HE, in particular at the Western universities.

Although this study acknowledges its limitation—(a) with the focus on Malaysian’s perspective and (b) using solely quantitative method—it is argued that its focus on Malaysian Malays and Chinese adult learners has ironically become its strength. This is because the literature on memorisation has targeted on mostly Hong Kong Chinese traditional school leavers and university students. Hence, the specific target on Malaysian adult learners can hopefully expand the scope of the current literature.

Declaration of Conflicting Interests

The author declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Funding

The author declared no financial support for the research and/or authorship of this article.

Notes

1. These are adult students who left university for a while and have enrolled in the university but have work experience. Hence they are generally more matured than, for example the traditional A-levels applicants.
2. For full validation of the instrument, please see Tan (2006).

References

- Alexander, I. D. (2007). Multicultural teaching and learning resources for preparing future faculty in teaching in higher education. *New Directions for Teaching and Learning*, 111(Fall), 27-33.
- Barbarous scratchings or universal system? The Chinese puzzle on paper. (2008, February 7). *Times Higher Education*. Retrieved February 19, 2009, from <http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=400474>
- Barnett, R. (2000). Supercomplexities and the curriculum. *Studies in Education*, 25, 255-265.
- Behling, O., & Law, K. S. (2000). *Translating questionnaires and other research instruments: Problems and solutions* (Sage University Papers Series on Qualitative Applications in Social Sciences, 07-131). Thousand Oaks, CA: Sage.
- Bempechat, J., & Drago-Severson, E. (1999). Cross-cultural differences in academic achievement: Beyond etic conceptions of children's understanding. *Review of Educational Research*, 69, 287-314.
- Biggs, J. (1987). *Student approaches to learning and studying*. Melbourne: Australian Council for Educational Research.
- Biggs, J. (1990, July). *Asian students' approaches to learning: Implications for teaching overseas students*. Paper presented at the Eighth Australasian Learning and Language Conference, Queensland University of Technology, Brisbane, Australia.
- Biggs, J. (1996). Western misperceptions of the Confucian heritage learning culture. In D. Watkins & J. Biggs (Eds.), *The Chinese learners: Cultural and psychological and contextual influence* (pp. 45-67). Melbourne, Australia: Australian Council for Educational Research.
- Biggs, J. (2003). *Teaching for quality at university* (2nd ed.). Berkshire, UK: Open University Press.
- Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor Study Process Questionnaire: R-SPQ-2F. *British Journal of Educational Psychology*, 71, 133-149.
- Biggs, J., & Watkins, D. (1996). The Chinese learner in retrospect. In D. Watkins & J. Biggs (Eds.), *The Chinese learner: Cultural, psychological and contextual influences*. (pp. 260-285). Melbourne, Australia: Australian Council for Educational Research.
- Case, J. M. (2007). Alienation and engagement: Development of an alternative theoretical framework for understanding student learning. *Higher Education*, 55, 321-332.
- Chen, M. J. (2002). Transcending paradox: The Chinese "middle way" perspective. *Asia Pacific Journal of Management*, 19, 179-199.

- Cohen, F. G. (1996, August 15). *Confucianism: An excerpt from a synopsis of the ethics of Confucianism*. Retrieved September 18, 2002, from <http://www.thespiritualsanctuary.org/Confucianism/Confucianism.html>
- Dahlin, B., & Watkins, D. (2000). The role of repetition in the processes of memorising and understanding: A comparison of the views of German and Chinese secondary school students in Hong Kong. *British Journal of Educational Psychology*, 70, 65-84.
- Don: Confucianism still relevant. (2004, November 4). *The Star*, p. 12.
- Durkin, K. (2007). The middle way: East Asian Master's students' perceptions of critical argumentation in U.K. universities. *Journal of Studies in International Education*, 12(1), 38-55.
- Echter, T., Kim, U., James Kau, C.-V., Li, H.-C., Simmons, C., & Ward, C. (1998). A comparative study in the levels of human values: People's Republic of China, Singapore, Taiwan, and the United States. *Asian Journal of Social Psychology*, 1, 271-288.
- Entwistle, N., & Entwistle, D. (2003). Preparing for examination: The interplay of memorising and understanding, and the development of knowledge object. *Higher Education Research and Development*, 22(1), 19-41.
- Entwistle, N., & Ramsden, P. (1983). *Understanding student learning*. London: Croom Helm.
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7, 286-299.
- Haggis, T. (2003). Constructing images of ourselves? A critical investigation into "Approaches to learning" research in higher education. *British Educational Research Journal*, 29(1), 89-104.
- Hair, J. F. J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis* (4th ed.). New Jersey: Prentice Hall.
- Helmke, A., & Tuyet, V. T. A. (1999). Do Asian and Western students learn in different way? An empirical study on motivation, study time, and learning strategies of German and Vietnamese university students. *Asia Pacific Journal of Education*, 19(2), 30-44.
- Higher Education Statistics Agency. (2007). *Percentage of mature entrants to full-time first degree courses in 2005/06 who are no longer in HE in 2007/08*. Retrieved December 7, 2009, from http://www.hesa.ac.uk/dox/performanceIndicators/0607/sn2_0607.xls
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1), 104-121.
- Hofstede, G. (1991). Management in a multicultural society. *Malaysian Management Review*, 26(1), 3-12.
- Hu, L.-T., & Bentler, P. M. (1998). Fit indexes in covariances structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Method*, 3, 424-453.
- Jiang, X. (2002). Zhang Dongsun: Pluralist epistemology and Chinese philosophy. In C.-Y. Cheng & N. Bunnin (Eds.), *Contemporary Chinese Philosophy* (pp. 57-81). Oxford, UK: Blackwell.
- Kember, D. (1991). A challenge to the anecdotal stereotype of the Asian student. *Studies in Higher Education*, 16(2), 117-127.
- Kember, D., Biggs, J., & Leung, Y. P. (2004). Examining the multidimensionality of approaches to learning through the development of a revised version of the Learning Process Questionnaire. *British Journal of Educational Psychology*, 74, 261-279.

- Kember, D. (1996). The intention to both memorise and understand: Another approach to learning? *Higher Education, 31*, 341-354.
- Kember, D., Wong, A., & Leung, D. Y. P. (1999). Reconsidering the dimensions of approaches to learning. *British Journal of Educational Psychology, 69*, 323-343.
- Kingston, E., & Forland, H. (2004, September 20-21). *Bridging the gap in expectations between international students and academic staff—"At home the teachers feed me with knowledge, but in the UK they help me pick up the spoon and learn to feed myself!"* Paper presented at the European Conference on Educational Research Post Graduate and New Researcher Pre-Conference, University of Crete. Retrieved December 7, 2009, from <http://www.leeds.ac.uk/educol/documents/00003751.htm>
- Knowles, M. (1990). *The adult learner: Neglected species*. Houston, TX: Gulf Publishing.
- Leach, L., Neutze, G., & Zepke, N. (2001). Assessment and empowerment: Some critical questions. *Assessment and Evaluation in Higher Education, 26*, 293-305.
- Leung, Y. P. D., Ginns, P., & Kember, D. (2008). Examining the cultural specificity of approaches to learning in universities in Hong Kong and Sydney. *Journal of Cross-Cultural Psychology, 39*, 251-266.
- Marton, F., Dall'Alba, G., & Kun, T. L. (1996). Memorising and understanding: The key to the paradox. In D. Watkins & J. Biggs (Eds.), *The Chinese learners: Cultural, psychological and contextual influences* (pp. 69-83). Melbourne: Australian Council for Educational Research.
- Marton, F., & Saljo, R. (1976). On qualitative differences in learning—I: Outcome and process. *British Journal of Educational Psychology, 46*, 4-11.
- Marton, F., Watkins, D., & Tang, C. (1997). Discontinuities and continuities in the experience of learning: An interview study of high-school students in Hong Kong. *Learning and Instruction, 7*(1), 21-48.
- Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood: A comprehensive guide* (2nd ed.). San Francisco: Jossey-Bass.
- Mok, I., Chik, P. M., Ko, P. Y., Kwan, T., Lo, M. L., Marton, F., et al. (2001). Solving the paradox of the Chinese teacher? In D. Watkins & J. Biggs (Eds.), *Teaching the Chinese learners: Psychological and pedagogical perspectives* (pp. 161-181). Melbourne: Australian Council for Educational Research.
- Mok, M. C., Kennedy, K. J., Moore, P. J., Shan, P. W. J., & Leung, S. O. (2008). The use of helping-seeking by Chinese secondary school students: Challenging the myth of "the Chinese learner." *Evaluation and Research in Education, 21*, 188-213.
- Niles, S. (1996). Cultural variation in learning strategies: A comparison of Australian and Sri Lankan university students. *Journal of Psychology, 130*(1), 83-94.
- Pallant, J. (2001). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (Version 10)*. Sydney, Australia: Allen & Unwin.
- The Prime Minister's Initiatives. (n.d.). Retrieved February 23, 2009, from <http://www.british-council.org/eumnd-pmi2-about.htm>
- Purdie, N., & Hattie, J. (2002). Assessing students' conceptions of learning. *Australian Journal of Developmental and Educational Psychology, 2*, 17-32.
- Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). London: Routledge.

- Renshaw, P. D., & Volet, S. E. (1995). South-east Asian students at Australian universities: Reappraisal of their tutorial participation and approaches to study. *Australia Educational Researcher*, 22(2), 85-106.
- Richardson, J. T. E. (1995). Mature students in higher education: An investigation of approaches to studying and academic performance. *Studies in Higher Education*, 20(1), 5-14.
- Russell, M. (2008, March 20-26). The age of uncertainty. *The Times Higher Education*, p. 24.
- Shaules, J. (2007). *Deep culture: The hidden challenges of global living*. Toronto, Ontario, Canada: Multilingual Matters.
- Tan, P.-L. (2006). *Approaches to learning and learning values: An investigation of adult learners in Malaysia*. Unpublished doctoral thesis, Queensland University of Technology, Brisbane, Australia.
- Tan, P.-L., Pillay, H., & Fiona, S. (2004). Adult learners in Malaysia: Some Issues to consider. In E. McWilliam, S. Danby, & K. Knight (Eds.), *Performing educational research* (pp. 303-317). Brisbane: Queensland, Post Pressed National Library of Australia.
- Tang, K. C. C. (1993). Spontaneous collaborative learning: A new dimension in student learning experience? *Higher Education Research and Development*, 12(2), 115-130.
- Tse, S. K., Marton, F., Ki, W. W., & Loh, K. Y. E. (2007). An integrative perceptual approach for teaching Chinese characters. *Instructional Science*, 35, 375-406.
- United Kingdom Council for International Student Affair. (2006/7). *Higher education statistics*. Retrieved February 24, 2009, from http://www.ukcosa.org.uk/about/statistics_he.php#table3
- Vijver, V. D., & Leung, K. (2000). Methodological issues in psychological research on culture. *Journal of Cross-Cultural Psychology*, 31(1), 33-51.
- Volet, S. E., Renshaw, P. D., & Tietzel, K. (1994). A short-term longitudinal investigation of cross-cultural differences in study approaches using Biggs' SPQ questionnaire. *British Journal of Educational Psychology*, 64, 301-318.
- Watkins, D. (2001). Correlates of approaches to learning: A cross-cultural meta-analysis. In R. J. Sternberg & L. F. Zhang (Eds.), *Perspectives on thinking, learning, and cognitive styles* (pp. 165-195). London: Lawrence Erlbaum.
- Watkins, D., & Biggs, J. (Eds.). (1996). *The Chinese learners: Cultural, psychological and contextual influences*. Melbourne: Australian Council for Educational Research.
- Watkins, D., & Ismail, M. (1994). Brief research report: Is the Asian learner a rote learner? A Malaysian perspective. *Contemporary Educational Psychology*, 19, 483-488.
- Watkins, D., & Reghi, M. (1991). The Asian-learner-as a rote-learner stereotype: Myth or reality? *Educational Psychology*, 11(1), 21-35.
- Zeegers, P. (2001). Approaches to learning in science: A longitudinal study. *British Journal of Educational Psychology*, 71, 115-132.
- Zeegers, P. (2002). A revision of the Biggs' Study Process Questionnaire (R-SPQ). *Higher Education Research & Development*, 21(1), 73-92.
- Zhang, L.-F. (2000). University students' learning approaches in three cultures: An investigation of Bigg's 3P Model. *Journal of Psychology*, 134, 35-55.
- Zhang, L.-F., & Sternberg, R. J. (2000). Are learning approaches and thinking styles related? A study in two Chinese populations. *Journal of Psychology*, 134, 469-489.

Bio

Po-Li, Tan is a lecturer in higher education in King's Learning Institute, King's College London. Her current research interests are intercultural awareness, intercultural pedagogy, cross-cultural coaching, adult learning, cross-cultural methodology, and internationalisation of higher education. She teaches sessions such as "Intercultural Pedagogy" and "Intercultural PhD Supervision" for lecturers and "Intercultural Awareness Development" for students.