Rietveld, J. (2013). Climbing the Great Wall: Linking Teacher Beliefs and Learning Styles in Cross-Cultural Teaching - Observations from cross-cultural teaching in Mainland China. Learning at City Journal, 3(1), pp. 7-19.



City Research Online

Original citation: Rietveld, J. (2013). Climbing the Great Wall: Linking Teacher Beliefs and Learning Styles in Cross-Cultural Teaching - Observations from cross-cultural teaching in Mainland China. Learning at City Journal, 3(1), pp. 7-19.

Permanent City Research Online URL: http://openaccess.city.ac.uk/2629/

Copyright & reuse

City University London has developed City Research Online so that its users may access the research outputs of City University London's staff. Copyright © and Moral Rights for this paper are retained by the individual author(s) and/ or other copyright holders. All material in City Research Online is checked for eligibility for copyright before being made available in the live archive. URLs from City Research Online may be freely distributed and linked to from other web pages.

Versions of research

The version in City Research Online may differ from the final published version. Users are advised to check the Permanent City Research Online URL above for the status of the paper.

Enquiries

If you have any enquiries about any aspect of City Research Online, or if you wish to make contact with the author(s) of this paper, please email the team at <u>publications@city.ac.uk</u>.

Climbing the Great Wall: Linking Teacher Beliefs and Learning Styles in Cross-Cultural Teaching - Observations from cross-cultural teaching in Mainland China Joost Rietveld – Cass Business School

Abstract

Scholars have suggested separate relationships between culture and learning styles, and between culture and teaching beliefs. In this essay I suggest that interrelated relationships between culture, learning styles and teacher beliefs may exist. Drawing on personal observations from cross-cultural teaching experiences in Mainland China, the essay illustrates how culture, learning styles and teacher beliefs inform each other and how they might be combined into an inclusive framework. Such a framework could aid in identifying and overcoming challenges from cross-cultural teaching and cross-cultural learning. The observations shed further light onto the on-going debate of how Chinese learn. The essay concludes with directions for future research for further development of the framework and our understanding of cross-cultural differences in the classroom.

Keywords: Teacher beliefs; learning styles; culture; cross-cultural teaching; China

1 Introduction

Cultural comparisons in the fields of learning and teaching have shown how learning styles (Holtbrugge and Mohr, 2009; Yamazaki, 2005) and teacher beliefs (Cai, 2004; Correa, Perry, Sims, Miller and Fang, 2008) are shaped by cultural backgrounds. Shared beliefs and values shape the way students learn and eventually what teachers think effective instruction in the classroom looks like. Whereas previous literature has hinted at connections between learning styles and teacher beliefs (cf. Correa et al., 2008), to my best knowledge no published work exists that integrates culture, learning styles and teacher beliefs into an inclusive framework. Such a framework would hold particular value in identifying and overcoming some of the barriers from cultural differences between teacher beliefs and learning styles in cross-cultural learning or cross-cultural teaching (cf. Ogbu, 1992; Volet, 1999; Wan, 2001).

Drawing on personal observations from cross-cultural teaching experiences in Mainland China, this essay aims to explore the possibilities of an inclusive framework incorporating the three pillars; culture, learning style, and teacher belief. Reviewing relevant literature, I find that culture ought to be included as a sixth indicator of what shapes students' learning styles, in addition to psychology types, educational specialization, professional career, current jobs, and adaptive competencies (Kolb 1984; Kolb and Kolb, 2005). Other literature postulates that culture, too, influences how teachers perceive what effective instruction in the classroom looks like and how students learn (Cai, 2004). Teacher beliefs, or 'teacher perspectives', are further shaped by what was experienced as a student in the classroom (Correa et al., 2008).

In the essay I draw on personal observations and data collection of a cross-cultural teaching experience in Mainland China. My findings illustrate challenges forthcoming from differences between students' learning style and the teacher's teacher belief. Tracing these discrepancies back to differences in cultural backgrounds, the essay shows how some of these challenges can be overcome by adaptation of teacher beliefs to the students' learning styles. Contextualized self-reflection and meaningful adaptation resulted in more effective knowledge transfer in the classroom and improved understanding between teacher and

students. The observations and data collection further contribute to the on-going debate between scholars about how the Chinese learn (cf. Holtbrugge and Mohr, 2009). Using Kolb's (1984) learning styles, the study shows that Chinese students have an accommodative learning style preferring active experimentation (AE) and concrete experiences (CE). These findings are in line with Yamazaki's (2005) application of culture to learning styles further validating the proposed theoretical framework.

The paper first reviews the relevant literature in pursuit of theoretical underpinnings for the inclusive framework. After proposing the framework the paper reports the methodology and main findings from the observations. Discussion, conclusions and suggestions for further research conclude the paper.

2 Theory overview: The role of culture in learning styles and teacher beliefs *2.1. The role of culture in learning styles*

Learning styles are individual consistencies in perceptions, memory, thinking and judgement across stimulus conditions (Curry, 2000). Learning styles are social psychological concepts that are only partially determined by personality (Kolb and Kolb, 2005). Individual learning styles are shaped at five different levels: adaptive competencies, current jobs, professional career, educational specialization and psychology types (Kolb, 1984; Kolb and Kolb, 2005). Recent research, drawing on typologies by Kolb (1984) and Honey and Mumford (1982), has looked at the role of culture on learning styles.

Using secondary data sources, Yamazaki (2005) shows how culture impacts learning styles within countries by drawing on six typologies of cultural differences. The author shows by using Hall's (1976) high versus low-culture contexts, how individuals in high-culture countries such as Japan and China have a tendency to learn through concrete experience abilities rather than abstract conceptualization abilities. In another study by Holtbrugge and Mohr (2009) the link between Kolb's learning styles and culture is operationalized and tested using Hofstede's (1994) cultural dimensions. Through survey questionnaire answers from 953 management students from various countries the authors find significant differences in learning style preferences by students from different countries. Furthermore, out of Hofstede's five cultural dimensions, individualism, masculinity, and uncertainty avoidance have a significant impact on preferred learning styles (Holtbrugge and Mohr, 2009). Not surprisingly, due to large cultural differences between Germany and China in individualism (67-20) and uncertainty avoidance (65 - 30) these countries are positioned at opposing ends on the grasping (AC-CE) and transforming (AE-RO) spectra (see diagram page 12).

In addition to the previously established effects of, psychology types, educational specialization, professional career, current jobs, and adaptive competencies on individual learning styles, recent studies show that culture should be included as a sixth indicator (Kolb 1984; Kolb and Kolb, 2005; Yamazaki, 2005). In similar vein, scholars have argued that culture not only has an influence on how individuals learn, but equally so on how teachers teach.

2.2. The role of culture in teacher beliefs

Where the literature on learning styles is plentiful and well developed, research on teacher beliefs or 'teacher perspectives' is relatively sparse (cf. Cai, 2004; Correa et al., 2008; Furinghetti and Pehkonen, 2002; Pajares, 1992; Thompson, 1992). Nevertheless, extant research has proven the concept to be relevant by showing how teacher beliefs can improve knowledge transfer in the classroom (Staub and Stern, 2002). Teacher beliefs are *"theories or ideas about what effective instruction looks like and how students learn"* (Correa et al., 2008; p. 141).

Culture influences how teachers perceive what effective instruction looks like and how students learn. In a study investigating why U.S. and Chinese students think differently Cai (2004) arrives at an interesting conclusion. The author concludes that part of the discrepancy can be traced back to differences in teacher beliefs between the respective teachers educating the Chinese and U.S. students. Chinese and U.S. teachers hold different values and beliefs which trickle through in their teaching styles. Cai (2004) induces a link between culture and teacher beliefs as teachers will likely use culture as a normative framework to guide their classroom practices. This link is validated by Correa and colleagues (2008) who, too, look at differences in teacher beliefs between Chinese and American teachers. Using interview data the authors illustrate how Chinese teachers hold values like 'student interest', 'student teacher relationship', 'real life connections' and 'prior knowledge' high, whereas U.S. teachers tend to value 'student discoveries', 'concrete representations', 'practice and repetition' and 'learning styles' more importantly. As the within groups consistency was high for these values, the authors are led to conclude that teaching is a cultural activity and that teacher beliefs come forth from shared cultural assumptions (Correa et al., 2008).

2.3. Towards an inclusive framework

The aforementioned studies take advantage of cross-cultural comparisons to develop their arguments. Arguably, when there is homogeneity within teacher groups or between teacher and students, culture will be taken for granted. However, culture's true colours are shown when learning styles and teacher beliefs stem from different cultural backgrounds. The main argument of this essay is straightforward: culture influences both learning styles and teacher beliefs, whereas learning styles and teacher beliefs, as shaped by culture, reciprocally influence each other. When students from one culture are faced by a teacher from another culture this might therefore lead to obstacles to effective knowledge transfer.

The idea presented here should be seen as evolutionary more so than revolutionary. Indeed, pointing at a possible three-way interaction Cai (2004; p. 158) previously noted "since teachers' belief systems are developed and nurtured in cultural, historical, and societal contexts where they reside, it is expected that these cultural, historical, and societal factors influence students thinking and learning through teachers beliefs. However, it is also possible that some of these cultural, historical, and societal factors as students' thinking and learning". Figure 1 represents a visual summation of the suggested inclusive framework between culture, learning styles and teacher beliefs.

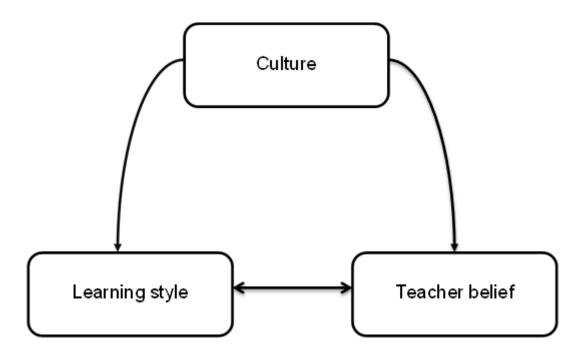


Figure 1. Inclusive framework for culture, learning style and teacher belief

Students visiting educational institutes in foreign cultures have been known to encounter difficulties in effective learning. Likewise, teachers visiting educational institutes in foreign cultures have been known to encounter difficulties in effectively transmitting knowledge in the classroom. The suggested inclusive framework offers explanatory value in uncovering some of the difficulties encountered in cross-cultural learning and cross-cultural teaching (cf. Ogbu, 1992; Volet, 1999; Wan, 2001). Notwithstanding the risk of entering 'vicious learning circles' in the case of homogeneity between the three factors ultimately resulting in 'folk pedagogies' (Bruner, 1996), heterogeneity between the factors could hamper effective knowledge transfer from teacher to student due to cultural barriers. As illustrated in the next section, some of these difficulties can be identified and possibly solved by approaching cross-cultural teaching through the lens of the inclusive framework.

3. Empirical illustration: Climbing the Great Wall

In this section I aim to illustrate the framework's applicability in practice and how it can aid in overcoming these barriers from a teacher's perspective. In doing so, I draw on personal observations and data collection from a cross-cultural teaching period in Mainland China. After elaborating on my methodology I first identify that there is indeed a discrepancy between teacher belief and learning styles in the said context. Hereafter I highlight some of the challenges resulting from this discrepancy followed by how these challenges were resolved.

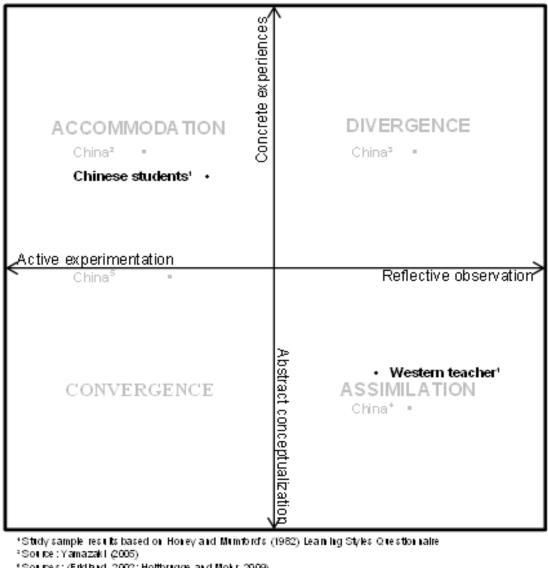
3.1. Methodology

Whereas studies based on quantitative research designs are predominantly used to study learning styles, the case study methodology is mostly deployed to study teacher beliefs (cf. Cai, 2004). Qualitative study designs allow for granular analysis required to set foundations for further exploration of novel theoretical ideas and real-life phenomena (Yin, 2009). Hence, I deploy a case study methodology. More specifically, I draw on observations and data collected during a cross-cultural teaching experience in Mainland China as observed through a western perspective. Data sources include field notes from class room observations and extracurricular reflections with students and local staff. Secondary data sources include completed Learning Style Questionnaires (Honey and Mumford, 1982) by students in addition to teacher evaluations. The Learning Style Questionnaire format was chosen for its straightforward and easy to understand questions to cater to the Chinese understanding of the English language and hence improve construct validity.

Between February and March 2012 I was invited for a five week teaching period at the Huang Hai University International College of Business in Zhumadian Mainland China. As module leader I was tasked to outline and teach a specialization course in Marketing Communication to a group of third year undergraduate Business students. Having had an introductory course in marketing, the specialization course focussed on both theoretical and practical constructs specifically in the field of marketing communication practices. The module outline was developed in accordance with U.K. teaching standards based on learning outcomes in seven domains ranging from 'knowledge' to 'practical'. Module assessment occurred through case study preparations and class participation (10%), a written group assignment and presentation (40%) and a two-hour written exam based (50%). The program consisted of 15 three-hour lectures, 16 two-hour tutorials and four one-hour unexamined recapitulation quizzes. The students, aged between 18 and 20 years old, needed to satisfactorily pass the course to be eligible for a visiting period at a U.K. university and complete their undergraduate programs. None of the students had been outside of China before, neither had I been in China before. Sufficient knowledge of the English language can be assumed as the students had completed or were in the process of completing IELTS examination.

3.2. Identifying the Great Wall: Teacher beliefs and learning styles

In order to overcome cross-cultural barriers one has first to identify the very existence of these barriers. The extant literature seems undecided on the dominant learning style of the Chinese. The Chinese learning style has been classified as divergent (Fridland, 2002; and Mohr, 2009), assimilative (Auyeung and Sands, 1996) Holtbrugge and convergent/accommodating (Lam, 1998). I issued Honey and Mumford's (1982) Learning Styles Questionnaire to a subset of students to further explore this indecision amongst scholars. The scores are similar with students having a strong preference for accommodative learning styles, implying preference of concrete experiences (CE) and active experimentation (AE) (Kolb, 1984; Kolb and Kolb, 2005). Coming from a Western-European, academic background myself, my Learning Styles Questionnaire showed a strong preference for assimilative learning styles, implying preferences for abstract conceptualization (AC) and reflective observation (RO). Figure 2 depicts the Chinese students' learning styles against the teacher's learning style.



Sources: (Fridland, 2002; Hoftbrugge and Mohr, 2009)

Source: (Auveung and Sands, 1996)

5 Sources: (Lam , 1998)

Figure 2. Kolb's (1984) learning styles applied

3.3. Challenges brought upon by the Great Wall

A number of challenges were observed during the cross-cultural teaching period. These challenges are best described by illustration of an early stage lecture. Lecture three, aptly labelled *'Marketing Communications Challenges'* dealt with the concept of brand equity, the value of brands and how this value comes into existence in the first place. The observed challenges subdivided into structure, lecture material, class room engagement and examination and are representative of the overall challenges observed during the former half of the teaching period.

- <u>Structure</u>: At the start of every lecture I would tie current and previous lectures together by visual representation of how the theoretical constructs would relate. Brand equity and consumer behaviour are correlated as higher brand equity allows for bigger price premiums leading to increased consumer spending. Regardless of thorough explanation of the concept of consumer behaviour, the students did not seem to recall or be able to connect any of the current and past concepts. Yesterday's theory appeared to have vanished from the students' memory and tying it into today's lecture material did not seem to have an impact on improving total recall.
- <u>Lecture material:</u> Lecture material would be strictly informed by what was covered by the core teaching text. The slides would summarize and give definitions of the key concepts and how they would relate. Concepts like *brands*, *brand equity*, *brand awareness* and *brand image* were explained and brought together in coherent theoretical informed frameworks. Hereafter these concepts were applied to famous brands like *Coca Cola*, *Google* and *McDonalds*. The students however appeared inapt at linking the theoretical constructs to domestic brands of their choice, neither did they seem capable of reinterpreting these concepts.
- <u>Classroom engagement</u>: For pacing purposes and keeping the attention of students I would stop after every few slides and ask if there were any questions or ask a specific question related to the lecture material. Response to the question 'What makes a world-class brand?' would be close to non-existent. Students seemed unwillingly or uncomfortable in engaging with teacher-led centralized classroom interaction.
- <u>Examination</u>: Students were asked to prepare a case study related to the lecture material and hand in their homework at the start of the afternoon tutorials. Using *Interbrand* the students were asked to analyse brand awareness and brand image (which together make for brand equity) for one of two world-class video game brands; *Nintendo* or *Microsoft*.¹ Whilst some students had spent considerable time on working with the *Interbrand* rankings, none were able to successfully link lecture material to the brand ranking database.

In retrospect it is apparent to identify an assimilative learning style (Kolb, 1984) in the organization of the described lecture and the underlying theories and beliefs of what makes for effective instruction (Correa et al., 2008). Lectures were theory-led and case examples were subordinate to the theory rather than the other way around. The teaching programme was tied together by visual representation of conceptual models and examination was based on showing ability. Taking into account the students' prevailing accommodative learning styles (Kolb, 1984), it is not difficult to see how the translation of my teacher belief into an educational programme failed to effectively disseminate the lecture material, or engage in successful interaction and examination for that matter (see table 1).

¹ **Interbrand** compares and ranks global brands based on their financial performance, role of the brand - the portion of the decision to purchase that is attributable to brand - and value of the brand, the ability of the brand to secure the delivery of expected future earnings (Adapted from: <u>http://www.interbrand.com/en/Default.aspx</u> - last accessed: 27/07/2012)

3.4. Climbing the Great Wall: Overcoming challenges

This section illustrates how some of the aforementioned challenges were overcome. It took not long to realize that adaptations had to be made in order to streamline knowledge transfer in the classroom. Again by describing a lecture, this time one at the very end of the module programme, I will illustrate how some of these challenges were dealt with. Lecture 16 *'Traditional advertising media'* provided an overview in strengths and weaknesses of the traditional advertising media (TV, radio, newspapers, magazines). The lecture overview is again subdivided into structure, lecture material, classroom engagement and examination.

- <u>Structure:</u> Contrary to tying lectures together by visualization of theoretical frameworks, during the latter half of the module programme lectures would start off with mechanistic repetition of what had been discussed the previous lecture. Such structured repetition of core concepts, or 'rote learning' (Jarvis, Holford, and Griffin, 2003), would prove very effective as students started remembering concepts and their meaning whilst 'warming up' for the lecture at hand.
- <u>Lecture material</u>: Before elaborating on *Standard Advertising Units* (SAUs) and the strengths and weaknesses of newspapers as a medium for advertising, students were triggered to first discuss what the distinctive characteristics of newspapers were and why a brand would (not) want to advertise in said medium. This was done on the basis of examples of domestic and local newspapers. The students found these discussions animating and engaging as it was more 'hands-on' and intuitive. Having real world examples preceding the abstract theoretical concepts, made it easier for the students to digest the lecture material. Furthermore, mathematical exercises based on real world data were unexpectedly perceived as fun and not too challenging.²
- <u>Classroom engagement</u>: Straying away from the teacher-led interaction, in decentralized manner students were asked to work together to discuss, based on real world data, which medium a particular brand would be best positioned in to advertise on. Students were engaged in the group-work as they helped each other out and discussed their answers within their respective group. The groups did not fail to present the correct answer in front of the class after completion of the assignment. The transition from central teacher-led interaction to decentralized group work had noticeably improved interaction and student engagement.
- <u>Examination</u>: Tutorial preparation entailed explaining why which advertising medium would be best suited to advertise entertainment products in. Tutorial engagement had dramatically improved after shifting the emphasis from granting points for giving correct answers to granting points for those who showed to have put in sufficient effort in their attempts to arrive at a satisfactory answer. Notwithstanding the correctness or completeness of their answers (opinions were widely divided between two alternatives), most students had done their homework rigorously and were more engaged in the tutorials.

² It is a known fact (cf. Cai, 2004) that Chinese students are well capable of mathematics and mathematical problem-solving. By no means do I claim that the students' qualities in solving the focal case problems are a result of changes in lecture structure or teacher belief.

After identification of the discrepancy between teacher belief and the students' learning styles, followed by adaptation towards the latter, knowledge transfer in the classroom had improved significantly. Adapting to an accommodative teaching style implied a more 'handson' approach using real world examples and trial and error. As a result, students were more engaged and, in better understanding of the lecture material which shone through in repetition of previous lecture material and application of real world cases to the lecture material at hand. Classroom engagement both during lectures as well as tutorials had improved due to decentralized teamwork and appraisal of effort over ability. Lastly, students were putting seemingly more effort in their preparatory activities.

Teacher belief	Teaching practice	Learning style	Challenge	Solution
(assimilation)		(accommodation)		
Attraction to logically	Emphasis in lecture	Attraction to new	\checkmark	Emphasis in lecture
sound theories (AC)	slides (21/25) on	experiences and		slides (15/33) on
	conceptual frameworks	acting on gut instinct		practical case examples
	over practical examples	(CE)		illustrating theoretical
				constructs
Excel at	Take logical reasoning	Excel at 'hands-on'	\checkmark	Devote more time to
understanding and	for granted but approach	problem solving,		explanation of theory in
organizing wide-range	case based math	trying different		classroom and assume
information (AC)	problems as potential	solutions (AE)		mathematical skills
	hurdles			
Ideas and concepts	Teacher-led classroom	Work in teams (CE)	\checkmark	Student team-work
over people (RO)	interaction			problem solving
Ideas and concepts	Trigger interaction by	Rely on other people	\checkmark	Allow for one-on-one
over people (RO)	allowing for student	for analyses (AE)		interaction during post-
	questions during lectures			lecture office hours
Good clear	Reward tutorial	Take practical and	\checkmark	Reward tutorial
explanation rather	preparation based on	experiential approach		preparation based on
than practical effort	demonstration of ability	(CE)		demonstration of effort
(RO)				
Concise approach	Tying together of	'Hands-on' and		Mechanistic repetition of
and clear explanation	lectures by visualization	experiential approach		theory at the start of
(AC)	of theoretical linkages at	(AE)		each lecture
	start of lecture			

Table 1. Challenges and solutions from differences between teacher belief and student learning styles

Table 1 provides an overview of the observations' overall findings illustrated through telling examples. The table distinguishes between overall learning style preferences (e.g. accommodation) and the preferred learning activities (e.g. active experimentation) (Kolb, 1984; Kolb and Kolb, 2005). The table concludes by listing the given solutions for the discrepancies.

4. Discussion

Overcoming barriers encountered in cross-cultural teaching can feel like climbing a Great Wall. This essay makes three contributions to overcoming some of these barriers. The essay contributes theoretically by linking the impact of culture on learning style to the impact of culture on teacher belief into an inclusive framework. Previous work hinted at unidirectional relationships between culture and learning styles and culture and teacher beliefs (Cai, 2004; Correa et al., 2008). Building on these works I suggest that the three factors are linked and

that these links have implications for identifying and overcoming some of the barriers encountered in cross-cultural learning and cross-cultural teaching. Culture directly impacts learning styles and teacher beliefs separately, and learning styles and teacher beliefs mutually inform each other. One theoretical implication of the inclusive framework is that future work, especially work on the topic of differences in cultural backgrounds, should consider incorporating the three factors.

Secondly, the essay explores possible implications of the framework by drawing on personal observations of a cross-cultural teaching experience in Mainland China. Whilst purely illustrative due to its qualitative and personal nature, the outcomes of the data collection show an interesting finding. Contextualized self-reflection of teacher beliefs by assessing one's own learning style in comparison to the learning style of the counter culture will result into valuable insights that can assist one to meaningfully adapt their teacher beliefs for more effective knowledge transfer in the classroom. Adapting the often taken for granted teacher belief to the students' prevailing learning style will translate into better classroom interaction and more effective knowledge transfer as was illustrated by the case study. I used the perspective of the teacher as it is the teacher's personal duty to identify, and where possible, overcome barriers to knowledge transfer from cross-cultural differences. By doing so, the essay adds to the growing and promising literature on teacher beliefs (Cai, 2004; Correa et al., 2008; Furinghetti and Pehkonen, 2002; Pajares, 1992; Thompson, 1992).

Lastly, the essay adds to the learning styles literature through empirical illustration of how Chinese learn. As shown in figure 2, there appears to be little consensus of the prevalent Chinese learning style. The findings of my data collection correspond with previous research postulating that Chinese learn differently than Westerners and more specifically that the Chinese prefer 'rote learning', shy away from centralized classroom discussion as they prefer one-to-one interaction, and thrive well under performance metrics valuing effort over ability (cf. Jarvis et al., 2003). Overlapping with my main argument, it is argued that these differences can be traced back to differences in cultural backgrounds between Chinese and Western students. Using Hofstede's (1994) uncertainty avoidance dimension, Yamazaki (2005) argues that the Chinese have a preference for active experimentation (AE) (Kolb, 1984). The author furthermore proposes that high-context cultures (Hall, 1976) as China tend to learn best through concrete experiences (CE) (Kolb, 1984). The outcomes of my Chinese students' Learning Style Questionnaires (Honey and Mumford, 1982) correspond with Yamazaki's (2005) propositions of how culture impacts learning styles.

5. Conclusions and future research

The role of culture in learning styles and teacher beliefs is of particular salience in our everincreasing internationalizing educational context where students undertake exchange projects, both short-term and long-term, as part of their didactic upbringing. In similar vein we can approach the academic community, which is increasingly showing 'transfer-marketlike' characteristics in response to rising publication pressure from research assessment boards. A natural consequence of this trend is higher turnover rates due to researchers transferring to other, often foreign, educational institutes in pursuit of their academic careers. Without thorough instructions about the learning styles of domestic students, such teacher mobility could pose threats to the effectiveness of the learning programs at these schools. Another area that can benefit from the inclusive framework is the ever-internationalizing domain of management education and learning. Due to its international character, management education is in need of frameworks for cross-cultural adaption for successful learning (Yamazaki and Kayes, 2004).

An inclusive approach towards the role of culture on learning styles and teacher beliefs will help us to better understand some of the challenges brought forward by cross-cultural teaching. Shared beliefs and values will impact both how students learn and how teachers teach. In those occurrences where there is a discrepancy between the cultural background of the student cohort and that of the teacher, challenges will invariably arise. In addition to looking at the relationship between culture and learning styles (Yamazaki, 2005), or the relationship between culture and teaching styles (Correa et al., 2008) in isolation, it is argued here that cross-cultural challenges can best be solved by recognizing the links between the three constructs. Indeed, linking students' learning styles with teachers' teaching beliefs in the context of cross-cultural differences will allow for contextualized self-reflection and meaningful adaptation possibly resulting into more effective knowledge transfer in the classroom.

This essay is not without shortcomings or limitations. Some of these limitations open up interesting avenues for future research. As the study at hand is illustrative and exploratory in nature, future research should deploy more quantitative research designs in further uncovering the links within the framework. Honey and Mumford's (1982) Learning Style Questionnaires can be issued at a larger scale while survey methods can assist in quantitative assessment of how teacher beliefs are brought to practice. While the inclusive framework in this essay does not suggest reciprocal relationships between culture and learning styles, or culture and teacher beliefs, it is not far-fetched to assume that collective learning styles and/or teacher beliefs have an influence on how culture within an environment evolves. Future research is invited to structurally assess the nature of the links within the inclusive framework and explore the possibility of the existence of feedback loops leading to 'folk pedagogies' (Bruner, 1996).

Another shortcoming of the essay is omitting to include Kolb's (1984) experiential learning cycle. As learning ought to be most effective by involving all four learning activities in sequential order (CE, RO, AC and AE), future research investigating how cross-cultural differences impact knowledge transfer should incorporate the learning cycle and investigates to what extent the circle applies to non-Western cultures. Further future research could make an endeavour in applying the integrated framework to theories of learning other than Kolb's (1984) learning styles. Examples of other theories of learning can be 'traditional' (e.g. behaviourism or cognitivism) or 'modern' (e.g. experiential learning, andragogy or social learning theories). Finally, essay concludes in line with Yamazaki (2005) regarding how the Chinese learn by drawing on two popular frameworks for operationalizing culture, Hofstede's (1994) cultural dimensions and Hall's (1976) high-context vs. low-context cultures. Notwithstanding the heterogeneous nature of culture especially in a country with a vast and rapidly developing population, future research should draw on other theories of culture in arriving at a more full-fledged understanding of how the Chinese learn in comparison to Western cultures.

References

Auyeung, P. and Sands, J. 1995. A cross-cultural study of the learning style of accounting students. **Accounting and Finance**, 36, 261-274.

Bruner, J. 1996. The culture of education. Cambridge, MA: Harvard University Press.

Cai, J. 2004. Why do U.S. and Chinese students think differently in mathematical problem solving? Impact of early algebra learning and teachers' beliefs. **Mathematical Behavior**, 23, 135-167.

Correa, C., Perry, M., Sims, L., Miller, K. and Fang, G. 2008. Connected and culturally embedded beliefs: Chinese and US teachers talk about how their students best learn mathematics. **Teacher and Teacher Education**, 24, 140-153.

Curry, L. 2000. Review of learning style, studying approach, and instructional preference research in medical education. In R.J. Riding and S.G. Rayner (Eds.) **International perspectives on individual differences: Vol 4. Cognitive Styles.** Stamford, CT: Ablex Publishing.

Fridland, G. 2002. Adult learning styles and cultural background: A comparison of the learning style preferences of American teachers of English as a second language and Chinese teachers of English as a foreign language. Unpublished doctoral dissertation, University of Memphis, TN.

Furinghetti, F. and Pehkonen, E. 2002. Rethinking characterizations of belief. In G.C. Leder, E. Pehkonen, and G. Torner (Eds.) **Beliefs: A hidden variable in mathematics** education? Dordrecht: Kluwer Academic Publishers.

Hall, E. 1976. Beyond culture. Garden City, NY: Anchor Press/Doubleday.

Hofstede, G. 1994. Value Survey Module 1994 manual. University of Tilburg, Maastricht, The Netherlands: IRIC.

Holtbrugge, D. and Mohr, A. 2009. Learning style preferences of management students: A cross-cultural perspective. Working paper.

Honey, P. and Mumford A. 1982. **The manual of learning styles.** Maidenhead: Peter Honey.

Jarvis, P., Holford J. and Griffin, C. 2003. **The theory & practice of learning.** London, UK: Routledge.

Kolb, D. 1984. Experiential learning: experience as the source of learning and development. New Jersey: Prentice-Hall.

Kolb, A. and Kolb, D. 2005. **The Kolb learning style inventory: Version 3.1 2005 technical specifications.** Boston, MA: Hay Group.

Lam, S. 1998. Organizational Performance and Learning Styles in Hong Kong. **Journal of Social Psychology**, 138, 3, 401-402.

Ogbu, J. 2002. Understanding cultural diversity and learning. Educational reasearcher, 21, 8, 5-14.

Pajares, M. 1992. Teachers' beliefs and educational research: Cleaning up a messy construct. **Review of Educational Research**, 62, 307-332.

Thompson, A. 1992. Teachers' beliefs and conceptions A synthesis of the research. In A.D. Grouws (Ed.) **Handbook of research on mathematics learning and teaching**. New York, NY: Macmillan.

Volet, S. 1999. Learning across cultures: Appropriateness of knowledge transfer. **International Journal of Educational Research**, 31, 625-643.

Wan, G. 2001. The learning experience of Chinese students in American universities: A cross-cultural perspective. **College Student Journal**, 35, 1, page numbers unknown.

Yamazaki, Y. 2005. Learning styles and typologies of cultural differences: A theoretical and empirical comparison. **International Journal of Intercultural Relations**, 29, 521-548.

Yamazaki, Y. and Kayes, D. 2004. An experiential approach to cross-cultural learning: A review and integration of competencies for successful expatriate adaptation. **Academy of Management Learning & Education**, 3, 4, 362-379.

Yin, R. 2009. Case study research: Design and methods, Newbury Park, CA: Sage.