Opportunities & Challenges: Learning Experience from International Architectural Students in the US

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INTRODUCTION

Universities and colleges in the United States are the destinations of the most international students' choices for their higher education. During 2009-2010, there are 690,923 international students studying in the US (Institute of International Education, 2011A). As a consequence of globalization, the number of international students studying in the US has nearly doubled in the period from 1990 to 2010. Typically, graduate programs in the US higher education rely more on international students. However, recent undergraduate enrollment in the US colleges and universities grow stronger -- in 2009, the number of international undergraduate students increased 16% comparing with 2% of graduate student increase (Fischer, 2009). The growth of international undergraduate students is largely dependent on enrollment of students from China, where more than 18% of entire international students come from. With the rise of Asian economy, students from Asian countries comprise the majority (about 62%) of international student population and students from China, India and South Korea comprise nearly half (44%) of all international student enrollments (Institute of International Education, 2011B).

Traditionally, most international students study in business (21%), engineering (19%), physics and math (18%). Only around 5% of international students study in fine and applied arts, including architecture and landscape architecture (Institute of International Education, 2011C).

Among all 27,852 students enrolled in NAAB-accredited programs, there are 2,992 students (7%)

defined by NAAB as "non-resident alien" (NAAB, 2010). During 2009-2010 academic year, there are 681 international students, 8% of all 8,653 newly enrolled architectural students (NAAB, 2010). Recently, many schools see significant increase of Asian students studying architecture. This trend may reflect the soaring demands of trained professional designers and the booming architectural job market in Asia. The benefits of the integration of international students into American architectural education are highly esteemed by universities, professional organizations, and individual faculty and students. Increasing numbers of international students improve the cultural diversity of American architectural education.

While being exposed to a different culture provides students with great opportunities to explore their education and future career, it also present challenges to students and faculty members, particularly international students' acclimatization to the contexts of American architectural education. Born and raised in their native countries, international students normally have already established their learning styles before coming to the US, which are significantly different from their Anglo students. In addition, in the US, all NAAB accredited programs place particular emphases on studio trainings with the application of history, building technology, structures, design theory, and other technical and academic topics deemed necessary for an understanding of architecture and its role in society. However, most international students, who come from developing countries with high school diplomas or college degrees, are normally trained in a top-down teacher-centered

model promoting introspective learning, which is different from the bottom-up student-centered model of knowledge transmission promoting extroverted learning used in American schools.

In addition, the different social-cultural settings and language barrier add more difficulties for international students' acclimatization process. In fact, there are wide disparities in the expectations in different nations with regard to what their architectural students are supposed to accomplish. These disparities include different curricular objectives, assessment criteria, and student behavior of conductions. When arriving at schools in the US, international students are often thrust into studios where they are expected to complete academic tasks that they may be completely unaware of. This can be very difficult for international students, especially if their confidence with the use of the English language in academic communication is still not strong. Problems with international students' learning process in studios can wreak havoc on their academic performance, even if they actually have insightful ideas to express.

International students have distinct and diverse cultural values and preferences. Some literatures have suggested that student learning styles are predetermined by their cultural orientations. Although individuals or subgroups within a culture may indicate some levels of variations, there are abundant evidences demonstrating a significant relationship between one's cultural background and his/her learning styles (Burns, 1991; Jones et al., 1999; Leask, 1999; McInnes, 2001; Ryan, 2000). De Vita (2001) stressed that learning styles differ from cultures. For example, previous researches (Cox and Ramirez 1981, Vasquez 1991) concluded that Hispanic students regard family and personal relationships as important and are comfortable with cognitive generalities and patterns. As a result, they often seek a personal relationship with a teacher and are more comfortable with broad concepts than component facts and specifics. Chan (1999) found that Western educators lack the understanding of Chinese students who are generally less spontaneous and more likely to conform to their teachers. Biggs (1996) also argued that Asian students, particularly from eastern Asia, perceived more authoritative roles from instructors and showed more respect.

An individual's preferred way for receiving information in any learning environment is the learning style of this individual. Fox & Bartholomae (1999) described learning styles as a biological and developmental set of personal characteristics that is defined by the way individual process information in his/her daily life. Researches (Hayes & Allinson, 1996; Ash, 1986; Honey & Mumford, 1986) suggests that students would have better learning performances when teaching style and teaching contents match students' learning styles and preferences. Students will be more motivated to learn by knowing more about their strengths and weaknesses. In turn, if an instructor can respond to a student's strengths and weaknesses, then appropriate pedagogic approach can be developed to facilitate and enhance the learning performance. If there is conflict between learning style and teaching style, then students' learning process would be impaired. As international students become an integral part of American architectural education, however, relatively little research has focused on understanding the relationship between international students' learning styles and their cultural preferences.

The accommodation of international students is an important goal in American architectural education that is committed to provide quality education and teaching expertise. In order to develop a systematic approach to more diverse student population today, it is critical for architectural educators to recognize the diverse learning styles caused by diverse cultures. It is necessary to enhance cultural understanding that would influence the development of pedagogy and teaching practice in order to satisfy diverse needs from the growing population of international students..

The project discussed in this paper is a pilot study which is aimed to understand how international architectural students' cultural origins and preferences influence their learning styles. The research question asked in this project is: are there any significant differences in learning performance, academic satisfaction and interpersonal relationship in studio caused by cultural differences?

METHODOLOGY

Using convenience sampling, 22 international architectural students from University of Idaho, Washington State University, and University of Nebraska-Lin-

coln agree to participate in this study. Among them, 13 are graduate students and 9 are undergraduates from a range countries in the world, as shown in Table 1. the investigator interview each student for two hours with semi-structured questionnaires which center on their learning experience in architectural schools in the US.

Of the investigation focus is the learning experience of the first year upon international students' arrival as the primary transition between different learning contexts occurs during this period. Also, it can be safely argued that the longer international students study in the US, the better they adopt the American learning context. As a result, international students' length of residence in the US is an independent variable to examine their learning experience. Table 2 shows the participants' length of stay. The questions center on students' encounter with American architectural curricula, learning experience on class assignments and instruction delivery, interpersonal relationship with instructors and peer students, and perception of course assessment.

Country	Undergraduate	graduate	total
China	3	6	9
India	2	3	5
South Korea	1	0	1
Vietnam	1	1	2
Spain	0	1	1
Taiwan	0	1	1
Brazil	1	0	1
Ghana	0	1	1
Algeria	1	0	1
Total	9	13	22

Table 1. Participants' country of origin and level of class.

Length of Residence in the US	Numbers of Participants
Less than 1 year	6
More than 1 yr but less than 2 yrs	7
More than 2yrs but less than 3 yrs	4
More than 3 yrs but less than 4yrs	2
4yrs or above	3

Table 2. Participants' length of residence in the US.

FINDINGS & DISCUSSION

Overall Learning Satisfaction

Among the 22 students, 15 (68.2%) report their overall learning experience is satisfactory. Table 3 shows the distribution of the 15 students in terms of their length of residence in the US. It is clear to see that students' learning satisfaction grows as their length of residence in the US increases. But their satisfaction starts to drop when they stay in the US for 4 years or more. This prove that international students gain more confidences in their acclimatization to the American architecture education contexts if they have more educational experience in the US. However, once their stays are long enough, their acclimatization brings them capabilities to re-evaluate the American architectural education model and dissatisfaction starts to increase. One student with more than 4 years residence in the US expresses his unhappiness towards the lack of consideration on practical knowledge in studio

> -- " *I want to learn how to control design budget when doing studio projects...This is a critical field of architecture. But all you hear is 'concept', 'concept.' I feel that is the only thing important here.*"

It is interesting to see that all the 7 students who report dissatisfactory on their learning experience are from east Asia, including 4 Chinese students, 1 South Korea student, 1 Taiwanese student, and 1 Vietnamese student. It should be noted that all those areas are historically influenced by Confucianism. Researches (Reid, 1998; Egri & Ralston 2004; Rao 2001; etc.) demonstrate that the long influence of Confucianism in east Asia has led to a unique cultural cluster in Asian countries and resulted in a particular learning style for students from that area. Hence, the conflict between Confucian learning style and American educational contexts among students from east Asia contributes to the dissatisfaction. This paper will discuss this in details later.

Length of Residence in the US	Numbers of Participants Feel Satisfactory about their learning experience
Less than 1 year	3 (50%)
More than 1 yr but less than 2 yrs	5 (71%)
More than 2yrs but less than 3 yrs	4 (100%)
More than 3 yrs but less than 4yrs	2 (100%)
4yrs or above	1 (30%)

Table 3. The distribution of students who feel satisfactory about their learning.

Major Learning Challenge during The First Year of Arrival

Traditionally, language problems and cultural barriers are the major challenges faced by international students when they are first introduced to a different learning environment. This study has found particular language and cultural issues that are associated with architectural international students' learning challenges. In this study, each student is asked to list three most difficult challenges during their first year of study in the US. Table 4 demonstrates the seven most reported challenges from the international students. Although all of those challenges are related to language- and cultural-differences, deep discussions during the interview show significant learning preference conflicts. This paper will discuss the top three most challenges.

The most reported challenge among both graduate and undergraduate students is that they have troubles in understanding the requirements of studio assignments. Most students report that they are able read the assignment sheets but still have little idea about what the instructor expects as there is no clear guideline or examples to follow. One interviewee said "*I felt a little bit lost in the beginning of studio. At home, the instructor will tell you everything clearly and you know what you are supposed to do. But here, you have to rely upon yourself. All the things are not prepared for you and you have to search to figure it out*." This complain is repeatedly mentioned by students from East Asia where the Confucian style of learning emphasizes introverted process. In China, Japan, South Korea, Vietnam and Taiwan, architectural knowledge is primarily transmitted from the instructor to students rather than allowing students to discover by themselves. In this learning style, concrete examples and specific guidelines are often given by the instructor to make students develop an acceptable understanding of particular issue which will then lead to creativity to flow. This approach is different from the Western model which develops students' skills mainly through self-discover and self-exploration.

Also, the format and requirement of class assignments are different between the US and the countries where the international students come from. During the interview, the international students highlight three specific questions when they receive class assignments during their first year of

Major Learning Challenges	Number of Students who Report	Number of graduate students who report	
1.Having troubles in	16 (73%)	9	7
2. Do not know how to raise a discussion question	14 (64%)	7	7
3. Fail to make the instructor understand my design ideas	13 (59%)	7	6
4. Feel being marginalized in studio	11(50%)	3	8
5. Lack of digital design skills	9 (41%)	9	0
6. The instructor is not supportive.	7 (32%)	6	1
7. Do not have enough time/ resources on the assignment	6 (27%)	4	2

Table 4. Major learning challenges reported by the international students at their first year of arrival.

study -- 1. what is the instructor's expectation for a good assignment? 2. where to look for the relevant information? and 3. how much is enough to be a good assignment. In American architectural schools, class assignments normally require students not only to demonstrate what students have learned, but also to apply those knowledge in a different situation for analysis or creation. As a result, students have more flexibility to formulate their assignments in a way that they prefer. However, for international students, this greater flexibility becomes ambiguous, uncertain, and fuzzy that they want to avoid. It makes them uncomfortable

to draw their own conclusion based on incomplete information from the instructor.

The second most complained challenge is the experience of class discussion. Language barriers contribute considerably to this challenge. Most undergraduate students (7 out of 9) feel it is very hard to understand the discussion content at their first year of study. Although they have passed particular English tests, like TOEFL, to gain the eligibility of college education in the US, the preparation of English tests fails to help them develop skills on particular English vocabularies used in architectural fields. Many international students also consider their spoken English skills poor during their first year of study. As a result, they do not want to actively participate in discussion because it may make them "lose face."

It should be noted that more than half of graduate students (7 out of 13) also report their challenges in participating in class discussion. Comparing with undergraduate students, internationals students at graduate-level normally have better English training as they need to pass advanced-level English tests, like GRE, to enter graduate programs in the US. Before coming to the US, most international students study in teacher-centered models where the instructor is seen as an authority of knowledge and there is a more hierarchical relationship between faculty and students. Consequently, students are not encouraged to question the instructor directly as this may cause the instructor to feel embarrassed. Also, for international students from East Asia and Arabic countries, it is considered impolite to show disagreement with others in the public. Even for some international students who have experienced open discussion in their home countries, they become more cautious in class participation particularly when they are in a new learning environment as they do not want to speak something inappropriate to offend American students. As a result, international students believe that having open discussion in studios or other courses is not helpful for them to develop social rapports with their peers.

In addition to language problems and cultural styles, learning preference also influences international students' performance of discussion in class. Many international students (4 out of the 13 graduate students and 5 out of the 9 undergraduate students) show that they do not like open class discussion

because they believe it is "*a waste of time*." This also reflects the influence of their previous teacher-centered learning preference. In this preference, the learning experience primarily relies upon the direct interactions between the student and the instructor and very few knowledge gained from interactions among students. Kirby (1996) stresses that Asian students usually do not have training in speculative and questioning approach. As a result, international students usually lack motivations and desires to question, probe, and criticize in class discussion. Rather, they prefer the instructor's immediate feedback on their own particular design problems.

In this study, almost 60% of the sampled students feel that their design are unfavorably assessed by their instructors because those instructors misunderstand their design ideas. Although poor spoken English can cause ineffective oral communication between international students and their instructors, architectural ideas can be exchanged through architectural drawings and models.

In American architectural schools, critical and abstract thinking is placed greater emphasis in curricula. Assessments and evaluations reflect how the instructor recognize the students' learning performance and learning levels. Spizzica (1997) believed that different cultures value different types of knowledge and skills differently. This different attitude to architectural knowledge and learning outcomes affect the assessment of international students by American professors. For example, one interviewee said "*When studied in my home country, architectural designs are not judged by the complexity of forms. Rather, we care more about the soundness of structures and fitness between the building and the site. But my instructor does not appreciate those issues and he keeps asking me to be more abstract*."

Preferred Format of Studio Works

Architectural learning is based on design studios. In studios, active learning occurs through group or individual problem-based projects. In this study, all international student interviewees are asked to rank their preferred formats of studio works. Table 5 shows the distribution of their first choices of the preferred formats. Most international students prefer to work with other international students, particularly those who come from the same country while there are relatively low motivations in both working

Preferred format	Total number of students who report	Number of undergraduate students who report	Number of graduate students who report
Team up with other international students	11	5	6
Individual	6	2	3
Team up with American students	4	2	2
Do not care	1	0	1
Do not know	1	0	1

Table 5. The distribution of the most preferred formats for studio works.

individually and working with American students.

This finding corresponds to the observation during the study that most international students, particularly students from China, India and South Korea, are very sensitive to the social hierarchy within a team. If each team member's role is not clearly defined, international students feel uncomfortable to work together. When the instructor assigns students to form teams, international students prefer the leader of the team to be also assigned. One interviewee elaborates the reason "if there is no assignment of the leader, then each American student will try to be the leader. One wants this direction while the other wants a different direction. There will have no progress at all."

Also, the feeling of power control contributes to the preferred format of studio works. Low ego, the lack of confidence of their language skills and challenges of adjusting to American learning environment prevent international students to actively seek leadership roles when they are working with American students. Within such a team, international students feel a unbalanced power of control hold by their American peers, a dominance of majority identity-characterized students. As a result, international students feel marginalized by their peers.

Two reasons can explain why international students prefer to work together by themselves. First, international students believe that it is easier to work with another international students, particularly if she/he is from the same country or cultural background. Knowing each other's strengths and weak-

nesses, the collaboration can be more effective and mutually complementary. Second, the heterogeneity of skills within a team can lead to a more cohesive and inclusive collaboration as everyone can be valuable for the team based on her/his skills and expertise. In this situation, international students and their diverse backgrounds and skills can be better recognized and accepted by their peers.

CONCLUSION

Based on the result obtained from a small group of international students, it is obvious that international architectural students demonstrate different learning challenges from their American peers due to their acclimatization processes, language skills, interpersonal relationship with their American peers, and, more fundamentally, their previous learning experience.

In addition, international students also face different learning preferences in studio learning, open class discussion, team work participation, and learning satisfaction. Those preferences include: a hybrid learning environment of student-centered and teacher-centered, clearly defined assignments with guidelines and explanation of expectations, culturally inclusive teaching, teams composed by students with diverse skills, and more role-defined responsibility.

Most of those challenges are actually caused by the mismatch between international students' learning preference and the teaching approaches in our architectural schools. It is critical for all educators in architectural schools to take cultural diversity into consideration before making educational practices. This paper reports an initial finding of an ongoing research project. Due to the small number of interview respondents, the finding is limited to the sampled international students. Further research should be conducted on a larger size international students in our architectural schools.

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