

A case study on the effects of campus climate to the cross-cultural norms of Taiwanese students

Chen, Yu-Li

Lunghwa University of Science and Technology, Taiwan, ROC (ylchen@mail.lhu.edu.tw)

Ching, Gregory S. ✉

Lunghwa University of Science and Technology, Taiwan, ROC (gregory_ching@yahoo.com)



ISSN: 2243-7681
Online ISSN: 2243-769X

OPEN ACCESS

Received: 20 May 2011

Revised: 16 June 2011

Accepted: 21 June 2011

Available Online: 23 June 2011

DOI: 10.5861/ijrsp.2012.v1i1.4

Abstract

The dawn of the age of globalization has brought forth the trend in cross-border mobility of population, more specifically for educational purposes, commerce, employment opportunities, and relocation. These phenomena fostered the development of a more diverse culture and multi-language global society. In Taiwan, an increase in international students is observed. In addition, the recent heightened volume of new migrant spouses has triggered the rise in emphasis on cross-cultural related researches. However, most studies are geared towards the cross-cultural adaptability of the visiting individual. In light of these issues, this case study details an empirical analysis of the cross-cultural norms of a host country's individuals. Participants are 100 randomly selected English as Foreign Language (EFL) students of a Science and Technology University in Taiwan. The mixed-method research paradigm was adapted, with focus-group interviews accomplished to gather insights from Taiwanese students regarding the factors that influenced their cross-cultural flexibility. A survey questionnaire was then generated from the focus-group results and later administered to the participants. Descriptive data analyses were accomplished using the Statistical Package for the Social Sciences (SPSS) software, while the multivariate analysis method Structured Equation Modeling (SEM) was achieved using the Analysis of Moment Structures (AMOS) software to analyze the causal relationships between the students' campus environment and cross-cultural norms. Results show that the students' exposure to a cross-cultural accepting environment has greatly enhanced their cross-cultural sensitivity and flexibility. In addition, results of SEM show a significant path from the students' campus environment, individual perspective, and cross-cultural flexibility. Implications suggest that EFL students in Taiwan should be exposed to more cross-cultural opportunities, in order to enhance their cross-cultural competencies.

Keywords: cross-cultural norm; cross-cultural adaptability; Structured Equation Modeling; EFL; Taiwan; mixed-method study

A case study on the effects of campus climate to the cross-cultural norms of Taiwanese students

1. Introduction

The recent large-scale movement of people across the globe (Appadurai, 2003), has triggered cross-cultural opportunities which are quite seldom in the past, and are now made possible almost every day (Dahl, 2000). These cross-cultural opportunities have opened up a variety of cultural tensions and visible exclusionary practices, which are of serious concerns (Baeker, 2002; Kedia, 2006; Prasad, Pringle, & Konrad, 2006). Similarly, the increase in global business activities have led corporations to seek new collaborative partners, opening up new product markets, and many other functions. These events lead to greater cross-cultural opportunities not only limited in the workplace, but to the society as well. Parallel to the rise in cultural diversity, an increase in cross-cultural related researches was clearly observed with the major terminologies interchangeably used, e.g. cross-cultural norms, cross-cultural competencies, cross-cultural adaptability, cross-cultural flexibility, and many others. In essence, the summation of these opportunities and phenomena has resulted into greater concerns regarding the cross-cultural competence of an individual living amongst a diversified global community (J. O. Johnson, Lenartowicz, & Apud, 2006; Prasad et al., 2006; Stockdale & Crosby, 2003).

In Taiwan, just within the recent years, the influx of international students have increased significantly, rising from 6,380 in 2001 to 21,005 in 2007 (Ko, 2008). With the efforts to increase the number of international students by the Taiwan's Ministry of Education (MOE) (Chang, 2005), between the periods of 2001 and 2005, incoming international student enrollments from Central and South America increased to almost 208 percent, while students coming from the European nations increased to around 95 percent (Ministry of Education, 2008). Beside the influx of international students, a gradual growth in numbers of new immigrant spouses have been noted since the early 1990s (Chiu, 2008; Yang, 2008), numbering from 336,483 in 2004 to 426,297 in the month of September 2009, which is an increase of 89,814 in just five years (National Immigration Agency, 2009). In essence, the rise in numbers of international students and new immigrant spouses have gradually transformed the school campus and the Taiwanese society in general, into a more diversified community.

With the rise in cultural diversity, linguistic competence has become one of the most important factors in enhancing a person's cross-cultural experience (Alptekin, 2002; J. O. Johnson et al., 2006; Lewthwaite, 1996; Zakaria, 2000). In Taiwan, the importance of studying English has always been a strong emphasis of most higher education institutions (Chia, Johnson, Chia, & Olive, 1999). However, in order to further enhance Taiwan's competitiveness, the MOE launched its national development plan for the years 2002 to 2007, with strong emphasis on the ability to use foreign languages (especially the English language), making it as one of the main focal point of the project (Ministry of Education, 2006). Consequently, higher education institutions in Taiwan are then encouraged to attract more international students, to offer more internationalized (English taught programs), and foreign language courses (Chang, 2005). These incidents in turn also contribute to hastening the diversification of the school campus environment (Altbach & Knight, 2007; Otten, 2003).

In response, while most cross-cultural studies are geared towards the cross-cultural adaptability or competence of the visiting individual, this case study details an empirical analysis of the cross-cultural flexibility of a host country's individuals. Within the various cross-cultural studies, the measures used and the construct they assess usually depends on the purpose and the type of competency required by a population of interest (Ross & Thomson, 2008). Hofstede (2001) suggested that the cross-cultural competence of an individual can be taught, but he indicated that personality factors also affect the levels of cross-cultural competencies that individuals can attain. Therefore, cross-cultural competence can be defined as a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enables that system, agency, or those professionals to work or function effectively in cross-cultural situations (Cross, Bazron, Dennis,

& Isaacs, 1989).

Within cross-cultural situations, tensions occur when there is a difference in behavior, thinking, values, and assumptions between people of different countries and cultures. For the past few years, the cultural and social profile of Taiwan is changing rapidly (Chu, 2000; Hsieh & Wang, 2008), demographic changes are actually transforming countries into a microcosm of the global village (Adler, Rosenfeld, & Proctor, 2006). The successful global workplace must employ workers with a great deal of global knowledge. Likewise, a successful institution of learning must embrace an internationalized community of knowledge. Therefore, living in a world with more diverse populations than just a few decades ago (Hynes, 2004), dramatic cultural transformation has placed cross-cultural tensions in the center of most cross-cultural issues (Neuliep, 2005).

Cross-cultural tensions are mostly stem from cross-cultural differences (Gannon, 2003). These cross-cultural differences often produce misunderstandings and lead to ineffective cross-cultural communications (O'Rourke & Tuleja, 2004). In addition, in the Social Identity Theory of Tajfel and Turner (1979), they mentioned that the greater attachment to one's own group typically predicts greater negative attitudes towards outside groups. Therefore, a deeper understanding of the nature of cross-cultural differences would increase the effectiveness in handling cross-cultural opportunities or situations (O'Rourke & Tuleja, 2004). Furthermore, clarification of cross-cultural differences and the establishment of one's identity coincides with the Psychosocial Theory of Erikson (1968), wherein he mentioned that in the development of a secure identity, a person who has explored what it meant to be a part of an ethnic group and is positive about it, would possess positive feelings toward outside groups. Therefore, help minimize the cross-cultural tensions that arise from having the feeling of uncertainty in unfamiliar new situations.

Within these constructs, cross-cultural flexibility of an individual is particularly very important. Simple ability such as to learn from mistakes and the adjustment of one's behavior whenever it is required, are associated with the ability to learn from new experiences (Spreitzer, McCall, & Mahoney, 1997). Many identified that cross-cultural flexibility as an important competency (Hannigan, 1990; Matsumoto et al., 2001; van der Zee & van Oudenhoven, 2000, 2001; Yamazaki & Kayes, 2004). In addition, Black (1990) mentioned that cross-cultural flexibility is positively related to cultural adjustment, while Arthur and Bennett (1995) perceived cross-cultural flexibility as to contribute to the success of international workers.

Arthur and Bennett (1995) empirically identify the factors, which are important for international workers' perceived success while working in a foreign country. With a total of 338 international participants coming from different countries, nationalities, and organizations, assigned to diverse countries, and performing diverse jobs. Results show that the factors such as family, flexibility, job knowledge and motivation, interpersonal skills, and cross-cultural openness have played an important role in the workers' overall effectiveness (Arthur & Bennett, 1995). Several early studies such as Torbiorn (1982), Ruben and Kealey (1979), Hanvey (1976), and Smith (1966), also implied that cross-cultural flexibility is an important factor for an individual's success with regards to their cross-cultural opportunities.

In the educational setting, Dunne (2009) conducted a study in order to understand how host students perceive cultural differences within the student body and to identify which factors have the most impact on their cross-cultural opportunities. Findings show that values and behaviors pertaining to the educational environment, such as attitudes towards academic work are the major sources of cross-cultural tensions among students (Dunne, 2009). This shows that host students does not differentiate themselves from international students by means of culture and language alone, but also with their overall academic experience. In addition, Dunne (2009) also mentioned that the school administration, including teaching and non-teaching personnel are key facilitators of cross-cultural success among students. In another cross-cultural study regarding post-graduate international students, Brown (2009) mentioned that the friendship among the students as one of the most important factor is attaining cross-cultural success. However, this all depends on the international students' initial desire and failure to achieve successful contact with local students. In essence, in order to achieve successful cross-cultural

opportunities, both the school and the students (local and international) should play an active role and contribute to the enhancement of the diversified academic campus.

To become globally competitive, today's students must possess the skills to interact with people who are different from themselves. With both the current student population and workforce being so culturally diverse, it is critical that there is an understanding and appreciation of the culturally diverse. Although this conceptualization of cross-cultural competence is rather specific, ultimately, cross-cultural competencies are traits expected to lead individuals to perform in a certain behavior; wherein these behaviors are then in turn expected to lead the desired outcomes that define effectiveness of the purpose it was designed for (Ross & Thornson, 2008).

2. Research Methodology

This study employs a mixed method research paradigm, wherein the researcher systematically combined or mixed ideas from both qualitative and quantitative research (B. Johnson & Christensen, 2008). Mixed method design presents unique opportunities to use multiple sources of information from multiple approaches to gain new insights into the social world (Axinn, Fricke, & Thornton, 1991). With varying data collection, researchers can provide information from one approach that was not identified in an alternative approach, at the same time, reducing non-sampling error by providing redundant information from multiple sources (Axinn & Pearce, 2006). Procedures for both qualitative and quantitative data collection and analyses were completed in two sequential phases by means of a random sampling method. Phase one of the study involved the formulation of the survey questionnaire, using focus group interviews and background literature review regarding the factors that affect cross-cultural perception and flexibility of Taiwanese English as Foreign Language (EFL) students. While, Phase two of the study involved the actual survey administration. Beginning research questions include:

1. To what degree are Taiwanese EFL students at a Science and Technology University cross-culturally flexible?
2. What are the factors that affect the Taiwanese EFL students' cross-cultural flexibility? Can these factors be used to measure the students' cross-cultural flexibility?

Phase one of the study involved the formulation of the survey questionnaire, using focus group interviews and background literature review regarding the factors that affect cross-cultural perception and flexibility of Taiwanese EFL students. A total of five (5) focus group interview sessions were accomplished with participants of around 8 to 10 randomly selected students per session. Development of the interview guide followed principles outlined by Stewart and Shamdasani (1990) as the funnel approach; six unstructured, open-ended questions were ordered from general to specific as a strategy to engage the interest of participants. Interview procedures included an introduction of the group discussion, overview of the topic, ground rules, and the initial question. All interviews were videotaped and voice recorded. Documentation and analysis followed Stenhouse's (1988) categorization style of case data. In addition, Glaser's (1978) notion of constant comparison was used in going through the previous reviewed studies, subsuming particulars into the generals, forming similar categories into dimensions. A pilot test of the questionnaire was accomplished for improvement, and the actual survey administration was then administered.

Phase two of the study involved the collection of the quantitative survey results. The survey questionnaire was randomly distributed among the EFL students of a Science and Technology university in Taiwan. A total of 100 valid questionnaires were collected and analyzed. Statistically analyses using the mean, standard deviation, frequency and percentage, and analysis of variance and covariance were accomplished. Structural equation modeling (SEM) was used to develop a model of the relationships among a set of variables. Correlations and covariance will be analyzed to determine the extent to which Taiwanese EFL students' cross-cultural flexibility. SEM analysis can be viewed as a combination of path analysis and factor analysis. The full model consists of a system of structural equations. A central concept for SEM models is covariance. The technique applied is the

analysis of covariance structures. The structural equation model summarizes the relationships among latent variables. Latent variables are hypothetical variables in that they correspond to concepts and vary in the degree of abstract. Unlike observed variables, or indicators of latent variables, they are free of random or systematic measurement errors (Bollen, 1989).

3. Results and Discussions

During the focus group interview sessions, students were asked regarding the factors that affect their cross-cultural perceptions and flexibility. Initially students mostly mentioned the factors regarding their individual perspective and value system, which are mostly cultural and traditional by nature. However, as the discussions continued students started to share what they observed and perceived with regards to their classmates (local and international students), teachers, and school administrators. Through the course of the focus group interview sessions re-occurring themes and ideas are noted and summarized, which were later formed into the survey questionnaire. Table 1 shows the different themes generated.

In the actual survey questionnaire, statistical software the Statistical Package for the Social Sciences (SPSS) and the Analysis of Moment Structures (AMOS) were employed for achieving descriptive data analysis, analysis of variance and covariance, factor analysis and path analysis. Profile of participants and the collected data were reported using mean, standard deviation, frequency, percentage, and correlation coefficient. The survey questionnaire consists of participants' demography and their amount of agreement to the different statements related to their cross-cultural perceptions and experiences. The five (5) value Likert (1932) scales used are the following: strongly disagree, moderately disagree, neither agrees or disagrees, moderately agree, and strongly agree, which are weighted from 1 to 5 respectively.

Table 1

Factors that affect the EFL students' cross-cultural flexibility (Focus group results)

International students' attitudes and behaviors towards other students
International students' presence (visibility)
Local students' attitudes and behaviors towards international students
Individual aspirations
Individual attitudes and behaviors
Individual preferences
Individual value system
School administrators' attitudes and behaviors towards international students
Teachers' attitudes and behaviors towards international students

3.1 SEM analysis

Model specification, estimation of free parameters, assessment of fit, and model modification are the four steps involved in the SEM analysis. Cronbach's (1951) alphas values and confirmatory factor analysis (CFA) were completed before the SEM analysis. Cronbach's alphas were initially calculated to examine internal consistency reliabilities for all major variables. The alpha value is 0.867, which is considered highly reliable (Bryman & Cramer, 1990). To analyze construct validity, CFA was applied to study the relationships between a set of observed variables (to reduce the number of observed variables into a smaller number of latent variables) and to assess the proposed measurement model (to examine the co-variation among the observed variables) in a structural equation model (Asparouhov & Muthén, 2009). Model fit measures were then obtained to assess how well the proposed model captured the covariance between all the items on the questionnaire.

3.1.1 Evaluation of the measurement model

To evaluate the goodness-of-fit of the measurement model, AMOS 7.0 was used to obtain a chi-square (χ^2) statistic; a test that measures the difference between a statistically generated expected result and an actual result to see if there is a statistically significant difference (Cohen, Manion, & Morrison, 2007), associated degrees of

freedom (df) and a probability value computed from maximum likelihood parameter estimates. In addition, AMOS used Hoelter's (1983) formula for Critical N (CN); the largest sample size which one would accept, at certain significance level, a model with this χ^2 statistic and this degree of freedom. This study yields CNs of 93 and 112 with significance levels of 0.05 and 0.01, respectively. The sample size for this SEM analysis is 100.

3.1.2 Evaluation of the entire model

The evaluation of the entire model brings a higher level perspective to the analysis. The significance of the variance of a single variable or the entire model can be tested by SEM. This study yield a high significance level ($\chi^2 = 30.99$; degree of freedom = 18; probability level = 0.029). The appropriate distributional assumptions are met and the model is correct. The departure of the data from the model is significant at the $p < 0.05$ level.

3.1.3 Model fit

To obtain CMIN, Chi-square is divided by the degree of freedom. CMIN/DF is the minimum sample discrepancy divided by degrees of freedom. This model yields $\chi^2 = 30.99$ and the degree of freedom = 18; Hence $30.99/18 = 1.72$, which indicates a favorable value. In reference to model fit, numerous indicators of goodness-of-fit were used. Some common fit indexes are the Incremental Fit Index (IFI), Comparative Fit Index (CFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI, also known as TLI), and root mean square error of approximation (RMSEA; see Table 2). In general, if the vast majority of the indexes indicate a good fit, then there is probably a good fit.

The Incremental Fit Index (IFI), by convention, should equal or be greater than 0.9 to accept the model (McDonald & Ho, 2002). The IFI of this model equals 0.93. The Bentler (1983) Comparative Fit Index (CFI) indicates the proportion in the improvement of the overall fit of the study model relate to a null model. The null model is an independence model in which the observed variables are assumed to be uncorrelated. The critical value for CFI is 0.9 or above in evaluating model fit (Bentler, 1990; Thompson, 2000). The CFI of this model equals 0.93 so the relative overall fit of the study model is 93% better than that of the null model estimated with the same sample data. While, RMSEA is based on the non-centrality parameter and is provided for fit index precision within construct of confidence intervals. The suggested value is 0.05 or below/good fit; below 0.08/fair fit. The current study had a RMSEA of 0.08, indicating a fair fit.

Table 2 shows both the suggested guidelines for evaluating model fit (Arbuckle, 2006; McDonald & Ho, 2002) and the results of indices for the study model.

Table 2

Results of model fit indices for the model

Model fit indices	Values	Suggested guidelines
χ^2/df	1.72	less than 3.0
CFI	0.93	equals/be greater than 0.9
TFI, IFI	0.93	equals/be greater than 0.9
RMSEA	0.08	0.05 or below / Good fit; below 0.08 / Fair fit

Source. Arbuckle (2006), Mc Donald & Ho (2002)

Table 3, 4, 5, and 6 shows variable correlation matrix, different factor loadings for the measurement model, the standardized casual effect of the model, participants' demography, and figure 1 the path model of the study, respectively. Correlation matrix (table 3) is a matrix giving the correlations between all the given variables. While the factor loadings (table 4) denote the various correlations of each variable to their corresponding factors and the percentage of explanation (e.g. the variable *school* is significantly correlated with the *campus climate factors* with an R value of 0.84, this also explains that around 71% (0.71) of the participating students rated this variable as moderately and strongly agree).

Table 3*Variable correlation matrix*

Factors	Own preference	Value system	Local student	Int'l student	School	Classroom	Behavior	Aspiration
Own preference	1.000							
Value system	0.429	1.000						
Local student	0.244	0.255	1.000					
Int'l student	0.210	0.220	0.193	1.000				
School	0.433	0.454	0.398	0.344	1.000			
Classroom	0.302	0.316	0.277	0.240	0.493	1.000		
Behavior	0.378	0.396	0.225	0.194	0.400	0.279	1.000	
Aspiration	0.391	0.410	0.232	0.201	0.413	0.288	0.401	1.000

The standardized causal effect of the model (table 5), shows the percentage of explanation of the different latent factors. Simply put the *campus climate factors* can explain (or influences) around 80% (0.80) of the *participants' individual perspective*. Similarly, the *participants' individual perspective* can explain around 95% (0.95) of the *participants' cross-cultural flexibility*. The SEM results clearly show that the *campus cross-cultural climate* (defined in this study as the overall cross-cultural atmosphere of the campus, which includes the attitudes and behaviors of both local and international students, school administrators, and teachers) is accountable for the *students' cross-cultural perspectives* (defined in this study as the students' own cross-cultural preferences and value system), which is in turn accountable for the *student's overall cross-cultural flexibility* (defined in this study as the students' cross-cultural behaviors and aspirations). (Please refer to figure 1 for a graphical representation of the SEM model.)

Table 4*Factor loadings for the measurement model*

Factors	Variables	Standardized loading	Squared multiple correlation R ²
Campus climate	School	0.84***	0.71
	Classroom	0.59***	0.34
	Local student	0.47***	0.22
	International student	0.41***	0.17
Individual perspective	Value system	0.67***	0.45
	Own preference	0.64***	0.41
Cross-cultural flexibility	Aspiration	0.64***	0.41
	Behavior	0.62***	0.39

Note. *** $p < 0.001$

Table 5*Standardized casual effect for the model*

Outcome	Determinants	Direct effect	Indirect effect	Total effect
Cross-cultural flexibility (R ² =0.9)	Campus climate		0.76	0.76
	Individual perspective	0.95***		0.95***
Individual perspective (R ² =0.65)	Campus climate	0.80***		0.80***

Note. *** $p < 0.001$

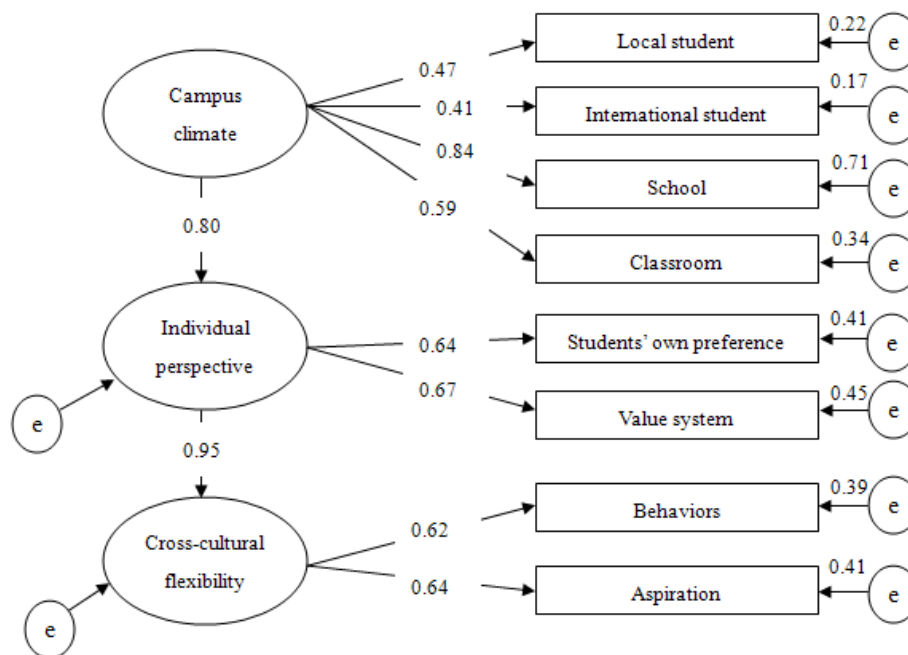


Figure 1. Path model of cross-cultural flexibility

Note. $X^2/df=1.175$, $p<0.001$, $GFI=0.923$, $CFI=0.929$, $RMR=0.054$, $RMSEA=0.049$

3.2 Participants' demography

For the participants' demography (table 6), the average participants age is 23 years old, with 73% of them female students and the remaining 22% male students. This is quite common for Taiwanese EFL students, even though that most Science and Technology university students are mostly male, however enrollment in the Department of Applied Foreign Languages are mostly dominated by female students. With regards to the participants' first language, 76% speaks Mandarin Chinese, while 5% speaks Taiwanese (also known as Fujian or Hookien language; a dialect originating from southern China), and 3% speaks Hakka (Hakka is a dialect originating from southeastern China). In addition, 45% of the participants claimed that they had traveled abroad, while only 6% had study abroad experiences. However, around 44% of the participants claimed that they planned to study abroad in the future. These results indicate that Taiwanese students are quite well traveled and nearly half of the participants aspired to study abroad someday. This also coincides with the participants' responses in the question whether they had plans or had taken the any international English examination, which is 60% and 28% respectively. Which gives ground to what Olsen (2003) mentioned that 70 percent of the future student mobility will be generated within the Asia Pacific region.

With regards to their cross-cultural experiences in the campus, 41% claimed that they have international student friends, while 85% had experience to be taught under an international (or foreign) faculty. In addition, around 38% of the participants currently have international students as classmates. All of these results indicate that the school campus is quite internationalized, both international students and faculty are quite visible. More importantly, the school exerts extra effort in hiring international faculty and in recruiting international students.

3.2.1 Campus cross-cultural climate

The factor *campus cross-cultural climate* is comprised of four (4) variables, namely: school, classroom, local students, and international students. The variable *school* comprises of questions and issues regarding the perceived school administrators' and teachers' cross-cultural attitudes and behaviors. Key questions include

teachers encourage interaction between local and international students, teachers understand international students' difficulties, teachers understand cultural differences in learning styles, cultural differences are respected in the institutions, and availability and opportunity to learn about different cultures is present in the campus. The mean score of this variable is **3.88** with a standard deviation of 0.570. This clearly indicates that most participants ranked this variable quite high. In addition, many studies have proven that campus (school) climate has indeed contributed to the students' personal, social, psychological, and even academic performance (Anderson, 1982; Kasen, Johnson, & Cohen, 1990; McEvoy & Welker, 2000; McManus, Keeling, & Paice, 2004). As Taiwan's higher education institutions faces the challenges and pressures brought forth by globalization and internationalization, most institutions adopt various strategies in order to enhance their overall internationalization (Chin & Ching, 2009).

Table 6*Descriptive statistics of the participants (N=100)*

Item	<i>n</i>	%	M	SD
Age			23.02	6.45
Female	73	73	21.86	5.57
Male	22	22	26.77	8.02
First language				
Mandarin Chinese	76	76		
Taiwanese	5	5		
Hakka	3	3		
Had traveled abroad				
Yes	45	45		
No	52	52		
Had studied abroad				
Yes	6	6		
No	91	91		
Future plans of studying abroad				
Yes	44	44		
No	32	31		
Have international friends				
Yes	41	41		
No	58	58		
Had international teachers				
Yes	85	85		
No	13	13		
Have international classmates now				
Yes	38	38		
No	57	57		
Had taken the TOEIC, TOEFL, or IELTS				
Yes	28	28		
No	68	68		
Have plans taking TOEIC, TOEFL, or IELTS				
Yes	60	60		
No	8	8		

The variables *classroom* and *local students* include questions and issues regarding the perceived local Taiwanese students' in-classroom and off-classroom cross-cultural attitudes and behaviors. Key questions include *students of different cultural background works well with each other*, *Taiwanese students' wants to know international students better*, and *Taiwanese students have a positive attitude towards international students*. The mean scores are 3.48 and 3.75, while the standard deviations are 0.763 and 0.600 respectively. The results from both variables are not surprising since school classmates or peers have the tendency to influence the students' personality (Webb, 1989). This in turn affects their interaction among international students. Therefore, when the school environment (including faculty) possesses a positive atmosphere towards international students, the local student body will most likely be influenced, thus, resulting in a more cross-cultural friendly school climate.

The last variable *international student* includes questions and issues regarding the perceived international students' cross-cultural attitudes and behaviors. Key questions include *international students only makes friends with other international students*, *international students only have friends from their home country*, and *international students are not interested in having Taiwanese friends* (negatively worded, hence, scores are reverse before data analysis). The questions asked are actually responses that emerged from the different focus group sessions (FG1, FG3, & FG4). Therefore, in order to maintain consistency during the data analysis, the scores are reversed deliberately. The mean score of this variable is 3.35 and the standard deviation is 0.715. Surprisingly, the mean score is moderately ranked. Initial analysis revealed that most EFL students are eager to take the first step in making international friends (as noted in table 6, 41% of the participants have international friends), furthermore, the teachers also played an important role in creating cross-cultural opportunities in the classroom and increasing the students' cross-cultural flexibility.

3.2.2 Individual cross-cultural perspective

The factor *individual cross-cultural perspective* is comprised of two (2) variables, namely: value system and own (individual or personal) preference. The variable *value system* refers to personal values which stems from their cultural background. Key questions include *believe that people should live in harmony regardless of their cultural backgrounds*, *respect for others*, *all people are equal*, and *be sensible on others feelings*. The mean score is computed at 4.32 and the standard deviation is 0.620. Results show that this variable scored the highest mean, which indicate a high cross-cultural positive value system. As previously stated in the SEM, the *campus cross-cultural climate* influenced the *individual's cross-cultural perspective*, which gives grounds to the fact that the school climate had shown a definite relationship with the values and belief systems of various groups within a school (Anderson, 1982). The variable *own preference* refers to personal choices and selections. Key questions include *trying new experiences* and *trying food from different countries*. This variable is considered very common to all participants; because of this the mean score was computed as 4.00 with a standard deviation of 0.711. These results suggest that the student participants are highly motivated to try new things, in essence, are more willing to experiment and learn from something new.

3.2.3 Cross-cultural flexibility

The factor *cross-cultural flexibility* comprises of two variables, namely: aspirations and behaviors. The variable *aspiration* refers to an individuals' desire to have cross-cultural opportunities. Key questions include *I like to meet people from different countries* and *I like to meet people of different culture*. The mean score was computed at 3.67 with a standard deviation of 0.580. While, for the variable *behavior* refers to the individuals' reaction and behavior during cross-cultural situations. Key questions include *communicating well in new situations*, *coping well in new situations*, *giving people the benefit of the doubt*, and *relating to people of different cultures*. The mean score was computed at 3.52 with a standard deviation of 0.634. These results indicate that student participants are quite accepting of new cross-cultural experiences, besides their willingness to meet new people and new cultures, the students seems to react well in new situations. Lastly, the participants overall *cross-cultural flexibility* is computed at 3.75, which is considered to be moderately high. This is computed by averaging all the mean scores of the variables. Results indicate that the EFL students' cross-cultural flexibility is moderately high. Considering the SEM results, the campus climate plays an important role in fostering the EFL students cross-cultural experience, in turn influence their personal perspectives, which finally influence their cross-cultural flexibility. (Please see table 7 for the list of mean scores of the different variables.)

4. Conclusion

The primary aim of this study is to understand the factors that affect the Taiwanese EFL students' cross-cultural flexibility and to what degree they are cross-culturally flexible. Using the mixed-method research paradigm, wherein both qualitative and quantitative data gathering methodologies were systematically combined. Focus group interview sessions were quite useful in gathering the much needed information in formulating the

survey questionnaire. While most cross-cultural studies were concentrated on the visiting individuals' cross-cultural competence. This study shall involve the cross-cultural flexibility of the host country's individuals, in this case the EFL students of a Science and Technology university in Taiwan. Key implications indicate that the EFL students' cross-cultural flexibility is moderately high. In addition, the students' cross-cultural flexibility is highly linked with the students' individual perspectives such as value system and preferences, and the campus cross-cultural climate such as the cross-cultural behaviors and attitudes of the school administrators, teachers, local and international students.

Table 7*Mean statistics of the participants*

Item	<i>n</i>	<i>M</i>	<i>SD</i>
Campus climate			
School	100	3.88	0.570
Classroom	100	3.48	0.763
Local student	100	3.75	0.600
International student	100	3.35	0.715
Individual perspective			
Value system	100	4.32	0.620
Own preference	100	4.00	0.711
Cross-cultural flexibility			
Aspirations	100	3.67	0.580
Behaviors	100	3.52	0.634
Overall cross-cultural flexibility	100	3.75	0.414

In particular, this study also utilized the multivariate quantitative data analysis SEM to analyze not only the strength of the relationship among the variables, but also the direction of the variables. Findings show that there exists a significant path from the campus cross-cultural climate, individual cross-cultural perspective, and cross-cultural flexibility. This finding is quite unique, because without the use of SEM findings will only be limited to the amount (or degree) of correlation between the variables (or the amount of influence exerted on each of the variables towards each other). Using SEM the relationships between the three (3) latent factors were clearly computed and a proposed model for computing Taiwanese EFL students is given (please see figure 1). In essence, results show that the students' exposure to a cross-cultural accepting environment has greatly enhanced their cross-cultural sensitivity and flexibility. While this study is limited to Taiwanese EFL students; which suggest that they are more accustomed to cross-cultural opportunities, further studies on students of other department or other fields of learning is imperative, in order to further test the proposed model for measuring the students' cross-cultural flexibility. Implications suggest that EFL students in Taiwan should be exposed to more cross-cultural opportunities, in order to enhance their cross-cultural competencies. Additional studies on a larger number of participants or participants of non-EFL courses are urged in order to further test and analyze the different factors that contribute to the cross-cultural flexibility of the students. Results shall inform policy makers, educators, and school administrators of the different strategies and methodologies in promoting students' cross-cultural competencies amidst the issue of internationalized campus.

Acknowledgement: The study was supported by funding from the National Science Council, Taiwan (Project No. NSC 99-2410-H-262-013). Part of this paper is presented at the *2011 9th Biennial Conference of Asian Association of Social Psychology* in Kunming, China. We are grateful to the anonymous reviewers for the valuable comments and suggestions.

5. References:

- Adler, R. B., Rosenfeld, L. B., & Proctor, R. F. (2006). *Interplay: The process of interpersonal communication*. New York: Oxford University Press.
- Alptekin, C. (2002). Towards intercultural communicative competence in ELT. *ELT Journal*, 56(1), 57-64. doi:10.1093/elt/56.1.57 <<http://dx.doi.org/10.1093/elt/56.1.57>>
- Altbach, P. G., & Knight, J. (2007). The internationalization of higher education: Motivations and realities. *Journal of Studies in International Education*, 11(3/4), 290-305. doi:10.1177/1028315307303542 <<http://dx.doi.org/10.1177/1028315307303542>>
- Anderson, C. S. (1982). The search for school climate: A review of the research. *Review of Educational Research*, 52(3), 368-420. doi:10.3102/00346543052003368 <<http://dx.doi.org/10.3102/00346543052003368>>
- Appadurai, A. (2003). Sovereignty without territoriality: Notes for a post-national geography. In S. M. Low & D. Lawrence-Zúñiga (Eds.), *The anthropology of space and place: Locating culture* (pp. 337-349). Oxford: Blackwell Publishing Ltd.
- Arbuckle, J. L. (2006). *AMOS 7.0 programming reference guide*. Chicago, IL: SPSS Inc.
- Arthur, W., & Bennett, W. (1995). The international assignee: The relative importance of factors perceived to contribute to success. *Personnel Psychology*, 48(1), 99-114. doi:10.1111/j.1744-6570.1995.tb01748.x <<http://dx.doi.org/10.1111/j.1744-6570.1995.tb01748.x>>
- Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 16, 397-438. doi:10.1080/10705510903008204 <<http://dx.doi.org/10.1080/10705510903008204>>
- Axinn, W. G., Fricke, T. E., & Thornton, A. (1991). The microdemographic community-study approach: Improving survey data by integrating the ethnographic method. *Sociological Methods and Research*, 20(2), 187-217. doi:10.1177/0049124191020002001 <<http://dx.doi.org/10.1177/0049124191020002001>>
- Axinn, W. G., & Pearce, L. D. (2006). *Mixed method data collection strategies*. New York: Cambridge University Press. <<http://dx.doi.org/10.1017/CBO9780511617898>>
- Baeker, G. (2002). Sharpening the lens: Recent research on cultural policy, cultural diversity, and social cohesion [Electronic Version]. *Canadian Journal of Communication*, 27. Retrieved December 15, 2009, from <http://www.cjc-online.ca/index.php/journal/article/viewArticle/1293/1317>
- Bentler, P. M. (1983). Some contributions to efficient statistics in structural models: Specification and estimation of moment structures. *Psychometrika*, 48(4), 493-517. doi:10.1007/BF02293875 <<http://dx.doi.org/10.1007/BF02293875>>
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238-246. <<http://dx.doi.org/10.1037/0033-2909.107.2.238>>
- Black, J. S. (1990). The relationship of personal characteristics with the adjustment of Japanese expatriate managers. *Management International Review*, 30(2), 119-134.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley-Interscience.
- Brown, L. (2009). A failure of communication on cross-cultural campus. *Journal of Studies in International Education*, 13(4), 439-454. doi:10.1177/1028315309331913 <<http://dx.doi.org/10.1177/1028315309331913>>
- Bryman, A., & Cramer, D. (1990). *Quantitative data analysis for social scientists*. London: Routledge.
- Chang, Q. S. (2005). *Internationalization of higher education from the perspective of globalization*. Retrieved October 25, 2008, from <http://english.education.edu.tw/ct.asp?xItem=7166&ctNode=512&mp=12>
- Chia, H.-U., Johnson, R., Chia, H.-L., & Olive, F. (1999). English for college students in Taiwan: A study of perceptions of English needs in a medical context. *English for Specific Purposes*, 20(2), 107-119. doi:10.1016/S0889-4906(97)00052-5 <[http://dx.doi.org/10.1016/S0889-4906\(97\)00052-5](http://dx.doi.org/10.1016/S0889-4906(97)00052-5)>
- Chin, J. M.-C., & Ching, G. S. (2009). Trends and indicators of Taiwan's higher education internationalization. *The Asia-Pacific Education Researcher*, 18(2), 185-203. doi:10.3860/taper.v18i2.1322 <<http://dx.doi.org/10.3860/taper.v18i2.1322>>
- Chiu, K. P. (2008). Exploring the relationship between foreign spouses and low birth-weight delivery: Case of Hsinchu city in 2004 [In Chinese]. *The Journal of Chinese Public Administration*, 5, 123-142.
- Chu, J. J. (2000). From incorporation to exclusion: The employment experience of Taiwanese urban aborigines. *The China Quarterly*, 164, 1025-1043. doi:10.1017/S0305741000019287 <<http://dx.doi.org/10.1017/S0305741000019287>>
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 197-334. doi:10.1007/BF02310555 <<http://dx.doi.org/10.1007/BF02310555>>

- Cross, T., Bazron, B., Dennis, K., & Isaacs, M. (1989). *Toward a culturally competent system of care* (Vol. I). Washington, DC: Georgetown University.
- Dahl, S. (2000). *Communications and culture transformation: Cultural diversity, globalization and cultural convergence*. Retrieved December 12, 2009, from <http://www.stephweb.com/capstone/0.htm>
- Dunne, C. (2009). Host students' perspectives of intercultural contact in an Irish university. *Journal of Studies in International Education*, 13(2), 222-239. doi:10.1177/1028315308329787
<<http://dx.doi.org/10.1177/1028315308329787>>
- Erikson, E. (1968). *Identity: Youth in crisis*. New York, NY: Norton.
- Gannon, M. J. (2003). *Understanding global cultures: Metaphorical journeys through 28 nations, clusters of nations, and continents*. Thousand Oaks, CA: Sage.
- Glaser, B. G. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. Mill Valley, CA: Sociology Press.
- Hannigan, T. P. (1990). Traits, attitudes, and skills that are related to intercultural effectiveness and their implications for cross-cultural training: A review of the literature. *International Journal of Intercultural Relations*, 14(1), 89-111. doi:10.1016/0147-1767(90)90049-3
<[http://dx.doi.org/10.1016/0147-1767\(90\)90049-3](http://dx.doi.org/10.1016/0147-1767(90)90049-3)>
- Hanvey, R. G. (1976). Cross-cultural awareness. In E. C. Smith & L. F. Luce (Eds.), *Towards internationalism: Readings in cross-cultural communication* (pp. 44-56). Rowley, MA: Newbury House Publishers.
- Hoelter, J. W. (1983). The analysis of covariance structures: Goodness-of-fit indices. *Sociological Methods and Research*, 11(3), 325-344. doi:10.1177/0049124183011003003
<<http://dx.doi.org/10.1177/0049124183011003003>>
- Hsieh, S. C.-y., & Wang, M. C.-y. (2008). Immigrant wives and their cultural influence in Taiwan. *Journal of National Taiwan Normal University*, 53(2), 101-118.
- Hynes, G. (2004). *Managerial communication: Strategies and applications*. Boston: McGraw-Hill/Irwin.
- Johnson, B., & Christensen, L. (2008). *Educational research - Quantitative, qualitative, and mixed approaches* (3rd ed.). Thousand Oaks, California: Sage Publications.
- Johnson, J. O., Lenartowicz, T., & Apud, S. (2006). Cross-cultural competence in international business: Toward a definition and a model. *Journal of International Business Studies*, 37, 525-543. doi:10.1057/palgrave.jibs.8400205 <<http://dx.doi.org/10.1057/palgrave.jibs.8400205>>
- Kasen, S., Johnson, J., & Cohen, P. (1990). The impact of school emotional climate on student psychopathology. *Journal of Abnormal Child Psychology*, 18(2), 165-177. doi:10.1007/BF00910728
<<http://dx.doi.org/10.1007/BF00910728>>
- Kedia, B. L. (2006). Globalization and the future of international management education. *Journal of International Management*, 12(2). doi:10.1016/j.intman.2006.02.005
<<http://dx.doi.org/10.1016/j.intman.2006.02.005>>
- Ko, S. L. (2008). *International students in Taiwan at an all-time high*. Retrieved June 11, 2008, from <http://www.taipeitimes.com/News/taiwan/archives/2008/02/12/2003400913>
- Lewthwaite, M. (1996). A study of international students' perspectives on cross-cultural adaptation. *International Journal for the Advancement of Counselling*, 19(2), 167-185. doi:10.1007/BF00114787
<<http://dx.doi.org/10.1007/BF00114787>>
- Likert, R. (1932). *A technique for the measurement of attitudes*. New York: Columbia University Press.
- Matsumoto, D., LeRoux, J., Ratzlaff, C., Tatania, H., Uchida, H., Kima, C., et al. (2001). Development and validation of a measure of intercultural adjustment potential in Japanese sojourners: The Intercultural Adjustment Potential Scale (ICAPS). *International Journal of Intercultural Relations*, 25(5), 483-510. doi:10.1016/S0147-1767(01)00019-0 <[http://dx.doi.org/10.1016/S0147-1767\(01\)00019-0](http://dx.doi.org/10.1016/S0147-1767(01)00019-0)>
- McDonald, R. P., & Ho, M.-H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64-82. doi:10.1037//1082-989X.7.1.64
<<http://dx.doi.org/10.1037//1082-989X.7.1.64>>
- McEvoy, A., & Welker, R. (2000). Antisocial behavior, academic failure, and school climate: A critical review. *Journal of Emotional and Behavioral Disorders*, 8(3), 130-140. doi:10.1177/10634266000800301
<<http://dx.doi.org/10.1177/10634266000800301>>
- McManus, I. C., Keeling, A., & Paice, E. (2004). Stress, burnout and doctors' attitudes to work are determined by personality and learning style: A twelve year longitudinal study of UK medical graduates. *BMC Medicine*, 2.
- Ministry of Education. (2006). *Challenge 2008: National development plan*. Retrieved December 18, 2009, from <http://english.moe.gov.tw/ct.asp?xItem=7043&ctNode=784&mp=11>
- Ministry of Education. (2008). *2008 Educational statistical indicators*. Retrieved May 25, 2008, from <http://english.moe.gov.tw/lp.asp?ctNode=816&CtUnit=507&BaseDSD=7&mp=1>

- National Immigration Agency. (2009). *Statistics [In Chinese]*. Retrieved December 15, 2009, from <http://www.immigration.gov.tw/aspcode/info9809.asp>
- Neuliep, J. W. (2005). *Intercultural communication: A contextual approach* (3rd ed.). Thousand Oaks, CA: Sage.
- O'Rourke, J. S., & Tuleja, E. A. (2004). *Intercultural communication for business*. Mason, OH: South-Western College.
- Olsen, A. (2003). *E-Learning in Asia: Supply and demand*. Retrieved September 25, 2008, from http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/News30/text004.htm
- Otten, M. (2003). Intercultural learning and diversity in higher education. *Journal of Studies in International Education*, 7(1), 12-26. doi:10.1177/1028315302250177
<<http://dx.doi.org/10.1177/1028315302250177>>
- Prasad, P., Pringle, J. K., & Konrad, A. M. (2006). Examining the contours of workplace diversity: Concepts, contexts, and challenges. In A. M. Konrad, P. Prasad & J. K. Pringle (Eds.), *Handbook of workplace diversity* (pp. 1-22). London: Sage.
- Ross, K. G., & Thomson, C. A. (2008). *Identification of measures related to cross-cultural competence* (DEOMI Internal Report No. CCC-08-2). Florida: University of Florida. Retrieved December 24, 2009 from http://www.deomi.org/CulturalReadiness/documents/Review_of_CCC_Measures_New_Cover_Page.pdf
- Ruben, B. D., & Kealey, D. J. (1979). Behavioral assessment of communication competency and the prediction of cross-cultural adaptation. *International Journal of Intercultural Relations*, 3, 15-17. doi:10.1016/0147-1767(79)90045-2 <[http://dx.doi.org/10.1016/0147-1767\(79\)90045-2](http://dx.doi.org/10.1016/0147-1767(79)90045-2)>
- Smith, M. B. (1966). Explorations in competence: A study of peace corps teachers in Ghana. *American Psychologist*, 21(6), 555-566. doi:10.1037/h0023607 <<http://dx.doi.org/10.1037/h0023607>>
- Spreitzer, G. M., McCall, M. W., & Mahoney, J. D. (1997). Early identification of international executive potential. *Journal of Applied Psychology*, 82(1), 6-29. doi:10.1037/h0023607
<<http://dx.doi.org/10.1037/0021-9010.82.1.6>>
- Stenhouse, L. (1988). Case study methods. In J. P. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook*. Sydney: Pergamon Press.
- Stewart, D. W., & Shamdasani, P. N. (1990). *Focus groups - Theory and practice*. Newbury Park, California: Sage Publications.
- Stockdale, M. S., & Crosby, F. J. (Eds.). (2003). *The psychology and management of workplace diversity*. Oxford: Blackwell Publishing Ltd.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks-Cole.
- Thompson, B. (2000). Ten commandments of structural equation modeling. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding MORE multivariate statistics* (Vol. xiii, pp. 437). Washington, DC: American Psychological Association.
- Torbiorn, I. (1982). *Living abroad: Personal adjustment and personnel policy in the overseas setting*. New York: Wiley.
- van der Zee, K. I., & van Oudenhoven, J. P. (2000). The multicultural personality questionnaire: a multidimensional instrument of multicultural effectiveness. *European Journal of Personality*, 14(4), 291-309. doi:10.1002/1099-0984(200007/08)14:4<291::AID-PER377>3.0.CO;2-6
<[http://dx.doi.org/10.1002/1099-0984\(200007/08\)14:4<291::AID-PER377>3.0.CO;2-6](http://dx.doi.org/10.1002/1099-0984(200007/08)14:4<291::AID-PER377>3.0.CO;2-6)>
- van der Zee, K. I., & van Oudenhoven, J. P. (2001). The multicultural personality questionnaire: Reliability and validity of self and other ratings of multicultural effectiveness. *Journal of Research in Personality*, 35(3), 278-288. doi:10.1006/jrpe.2001.2320 <<http://dx.doi.org/10.1006/jrpe.2001.2320>>
- Webb, N. M. (1989). Peer interaction and learning in small groups. *International Journal of Educational Research*, 13(1), 21-39. doi:10.1016/0883-0355(89)90014-1
<[http://dx.doi.org/10.1016/0883-0355\(89\)90014-1](http://dx.doi.org/10.1016/0883-0355(89)90014-1)>
- Yamazaki, Y., & Kayes, D. C. (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. doi:10.5465/AMLE.2004.15112543
<<http://dx.doi.org/10.5465/AMLE.2004.15112543>>
- Yang, H. C. (2008). *Globalization of the new immigrants females - Taiwan foreign and mainland spouses social exclusion and social integration of research [In Chinese]*. Unpublished Masteral thesis, Soochow University, Taipei City.
- Zakaria, N. (2000). The effects of cross-cultural training on the acculturation process of the global workforce. *International Journal of Manpower*, 21(6), 492-510. doi:10.1108/01437720010377837
<<http://dx.doi.org/10.1108/01437720010377837>>
-