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Acculturative hassles and strategies: Relationship between study abroad related depression, anxiety, and stress

Ching, Gregory S.
Graduate Institute of Educational Leadership and Development, Fu Jen Catholic University, Taiwan, ROC (gregory_ching@yahoo.com; 094478@mail.fju.edu.tw)
Chao, Pei-Ching
Graduate Institute of Educational Leadership and Development, Fu Jen Catholic University, Taiwan, ROC (126636@mail.fju.edu.tw; 99152513@nccu.edu.tw)
Lien, Wei-Chih
Department of Applied Foreign Languages, Lunghwa University of Science and Technology, Taiwan, ROC (wclien@mail.lhu.edu.tw)

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Abstract

Within the 2013 OECD annual education report, statistics have shown that there are already around 4.3 million tertiary level students studying outside their home country. Yet, this number is expected to increase in the years to come. However, parallel to the increasing number of study abroad opportunities are the rising number of problematic mental health issues of these international students. In Taiwan, similar trends of increasing number of international students are also observed. A more distinct Taiwan characteristic is the presence of four foreign student groups, namely: international students (IS), mainland Chinese students (MCS), Hong Kong and Macau students (HKM), and the overseas Chinese students (OCS). With the goal of developing Taiwan higher education institutions into strong venues for study abroad, it is quite important that these students are well taken care of. Therefore, understanding the students' mental health situation is a key step in achieving this purpose. In light of this issue, the current paper shall present the findings of a study focusing on the different student groups' acculturative hassles and strategies and the corresponding relationship with their level of depression, anxiety, and stress. Focus group interviews were conducted to gather the various acculturative hassles, while a revised acculturative strategies survey based on Barry's (2001) East Asian Acculturation Measure (EAAM) was used to determine the students' reactions and behaviors during study abroad. In addition, the Depression Anxiety Stress Scales (DASS) was also administered to measure the students' level of depression, anxiety, and stress. A total of 888 responds were collected from an online survey that lasted for three weeks. Factor analyses were accomplished resulting in the formation of three major groups of acculturative hassles, namely: adverse feelings, struggles, and communication (language) difficulties. Statistical results show that the HKM scored highest in the three DASS scales for depression, anxiety, and stress. In addition, OCS is the most marginalized and separated student group among the foreign students. Lastly, IS seems to have the most communication difficulties, while all the students moderately struggles with their academic related hassles. Additional,

implications and recommendations are also provided.

Keywords: study abroad; acculturation strategy; hassle; overseas Chinese students; mainland Chinese students; international students

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1. Introduction

Statistics have shown that the number of students studying outside their home countries is but increasing (OECD, 2013). These students more commonly categorized as *international (or foreign) students* are defined as individuals who temporarily reside in a country other than their country of citizenship in order to participate in international educational exchange as students (Paige, 1990). In Taiwan, it is reported that during the 2013-2014 school year, a total of 78,261 foreign students studied in Taiwan (Ching, Lien, & Chao, 2014). The Taiwan Ministry of Education (MOE) statistics reports an average annual increase of around 17% foreign student enrollment. Quite unique is the presence of four distinct foreign student groups, namely: International students (IS), mainland Chinese students (MCS), Hong Kong and Macau students (HKM), and overseas Chinese students (OCS) (MOE, 2014). This influx of foreign students in Taiwan is in line with the drive towards the internationalization of Taiwan higher education institutions (Chin & Ching, 2009; Ching & Chin, 2012; Chin, Wu, & Ching, 2012). More importantly, the impact of low birth rates in Taiwan might also force several low performing universities to close down (Leung, 2013). Therefore, the additional enrolment of foreign students is seen as an opportunity to fill up for the oversupply of higher education institutions and at the same time provides the opportunity to increase its revenue.

Following the recent trend of rising study abroad opportunities are the increasing cases of problematic mental health issues of these sojourning students (Lucas, 2009). Some common reported issues are alienation (Greatrex-White, 2008), binge drinking (Pedersen, Neighbors, Larimer, & Lee, 2011; Hummer, Pedersen, Mirza, & LaBrie, 2010; Pedersen, Larimer, & Lee, 2010), depression (Muto, Hayes, & Jeffcoat, 2011), loneliness (Hunley, 2010), and many others physical and mental health issues. In reality, study abroad should be an enjoyable experience; even though the encounter with a new culture is not without stress (Berry, 2005; Ward, Bochner, & Furnham, 2001), however, if signs of mental health issues could be detected early, worst effects of such issues could be prevented. Therefore, it is quite important to understand the mental health situations of these students.

In general, study abroad has well been praised to have produced significant learning improvements, however, two significant obstacles exist; language and culture (Vande Berg, Connor-Linton, & Paige, 2009). Therefore, successful study abroad can be said to be determined by how, and how well, groups and individuals manage the transition when they come into contact with another culture (Sam & Berry, 2010, p. 472). Such transition is more commonly known as *acculturation*. Acculturation explains the process of cultural and psychological change that results following meeting between cultures (Sam & Berry, 2010, p. 472). Currently, there are several terms interchangeably used with acculturation, such as assimilation, biculturalism, multiculturalism, integration, and globalization, among others (Sam & Berry, 2006). However, acculturation is still the most common or generic term used by educators and researchers.

Within a study abroad framework, prior to coming into contact with each other, the home (origin) culture and the host (destination) culture are two distinct cultural groups. Acculturating individuals and groups (e.g. foreign students) brings with them cultural and psychological qualities to the new society (host country), and while the new society also possess a variety of such qualities (Sam & Berry, 2010). Acculturation is then the process of cultural and psychological change that follows such meetings of two distinct cultures. Therefore, to fully understand the compatibility (or incompatibility) in cultural values, norms, attitudes, and personality between the two cultural groups in contact; a careful study on the acculturation process is a must.

Putting it all together, the current paper shall present the findings of a study focusing on the different student

groups' acculturative hassles and strategies and the corresponding relationship with their level of depression, anxiety, and stress. Focus group interviews were conducted to gather the various acculturative hassles the students encounter, while a revised acculturative strategies survey based on Barry's (2001) East Asian Acculturation Measure (EAAM) was used to determine the students' reactions and behaviors during study abroad. Lastly, the Depression Anxiety Stress Scales (DASS) was also administered to measure the students' level of depression, anxiety, and stress (Lovibond & Lovibond, 1995). In essence, understanding the inter-relationship among the students' acculturative hassles and strategies and their corresponding level of depression, anxiety, and stress is an important primary step in help making study abroad experience enjoyable and productive.

2. Research design

The current study uses a *mixed-method research* design paradigm, wherein the qualitative focus group interview method was used to collect information needed to help formed a survey questionnaire (Cohen, Manion, & Morrison, 2007). Later on, the formulated *survey* was used to gather information at a particular point in time with the notion of describing the existing conditions. For the participants of the study, as mentioned earlier a distinct characteristic of Taiwan higher education institutions' internationalization is the presence of four foreign student groups. Hence, the current study makes use of the four foreign student groups, namely: International students (IS), mainland Chinese students (MCS), Hong Kong and Macau students (HKM), and overseas Chinese students (OCS) as study participants. OCS are students who are of Chinese ethnicity, which are born and still living overseas, or have lived abroad for more than six years and have a permanent residence or have obtained long-term residency in a foreign country. IS are non-Chinese speaking students who are from another country besides mainland China, Hong Kong, Macau, and OCS. HKM are students from Hong Kong and Macau (primarily speaks Cantonese). Lastly, MCS are students from mainland China. Comparative results are then provided to better depict the implications of the various acculturative hassles and strategies towards the different student groups.

3. The study

3.1 Acculturative hassles

During the fall semester of 2013, an invitation was sent out inviting volunteer study abroad (foreign) students to join a series of focus group discussions within a private university in the Northern area of Taiwan. Free pizzas, sodas, and a convenient store cash certificate worth 100 NTD (approximately 3 USD) were offered as incentive to the participants. Topics of the discussion includes the various hassles that the students' encounter during their daily study (including living) routine in Taiwan. Hassles are said to be the everyday life event dissatisfactions (or distractions), which cause minor stresses (Tajalli, Sobhi, & Ganbaripanah, 2010).

At the beginning of each session, students are told of the topic and at the same time informed that they can freely leave the session if they are not comfortable with the discussions. The focus group sessions lasted approximately 30 minutes with an average of 6 to 7 attendees. A total of 6 focus group sessions (2 MCS groups, 2 IS groups, 1 HKM group, and 1 OCS group) were accomplished. Average age of participants is 21 years old, while 29 of the students are from the Asia-pacific region with the remaining 11 are from the US and other European countries.

Results of the acculturative hassle focus group sessions were analyzed using the constant comparison approach, wherein newly collected information is compared with previous gathered results (Glaser & Strauss, 1967). Resulting themes include a 26 items acculturative hassles involving day to day living and academic related activities and a 6 items communication hassles. Further exploratory factor analysis of the items will be discussed in the succeeding sections of this paper.

3.2 Acculturation strategies

On many occasions, Berry (1980, 1997, 2004, 2005) mentioned that there are four acculturation strategies based on two distinct orientations towards one's own and to those of the host country. These four strategies are namely: Assimilation, Integration, Separation, and Marginalization. *Assimilation* includes items that denote the loss of ones' own identity and the fully embracing of the new culture (host country). *Integration* includes items that describe a person retaining the best of both worlds (home and host countries). *Separation* includes items that describe ones' reluctant in accepting the new culture, while retaining only ones' own identity. Lastly, *marginalization* includes items that describe a person who rejects both home and host culture.

To measure the various acculturation strategies, the current study make use of Barry's (2001) 29 items East Asian Acculturation Measure (EAAM). EAAM is specifically designed to gathered data on the four acculturation strategies; more specifically the survey is designed according to the contemporary situations and characteristics of East Asian countries (Yu & Wang, 2011). Cronbach alpha reliability of the scale is computed to be from .74 to .85 (Barry, 2001). Revisions made on Barry's EAAM are the removal of the items regarding the effects of language. To compensate for the language related items removal, additional emphasis on communication hassles were asked during the previous focus group sessions. In addition, the level of Chinese language proficiencies were also asked and later included in the analysis. Further confirmatory factor analysis of the items will also be discussed in the succeeding sections of this paper.

3.3 Students' level of depression, anxiety, and stress

The 42 items Depression Anxiety Stress Scales (DASS) was used to collect the students' self-reported measures of depression, anxiety, and stress. A more distinct note on the DASS is that it was deliberately designed to measure depression, anxiety, and stress within diverse settings (Crawford & Henry, 2003). The psychometric properties of DASS were assessed with quite high Cronbach alpha reliability of .91, .84, and .90 respectively (Lovibond & Lovibond, 1995). In addition, Lovibond and Lovibond (1995) provided normative scores and standard deviations (SD) for the measures as 6.34 (6.97), 4.7 (4.91), and 10.11 (7.91) for the depression, anxiety, and stress scales, respectively.

4. Results and discussions

4.1 Study participants

The survey was administered online to all foreign students in Taiwan. A poster was sent and posted in all of the international students' offices throughout Taiwan higher education institutions on December of 2013. As an incentive for all the students who participated in the survey, prizes were given away in a random raffle draw during the middle of December. A total of 888 students participated in the survey. Overall Cronbach's alpha reliability of the survey is computed at .89, considered to be highly reliable results (Cohen, Manion, & Morrison, 2007). Table 1 shows that almost half of the participants are IS with 433 or 48.8%, followed by MCS with 270 or 30.4%, OCS with 99 or 11.1%, and lastly HKM with 86 or 9.7%. Table 2 shows a more detailed by country participants separated by gender denoting an almost equal number of male and female respondents.

Table 1

Student participants categorized by student groups (N=888)

Student groups	Frequency	Percent
International students (IS)	433	49
Mainland Chinese students (MCS)	270	30
Oversea Chinese students (OCS)	99	11
Hong Kong / Macau students (HKM)	86	10
Total	888	100

Table 2

Study participants' country of origin (N=888)

Country	Gender		*n*	%
	Female	Male		
China	167	103	270	30
Hong Kong	28	26	54	6
Macau	15	17	32	4
Indonesia	52	52	104	12
Malaysia	47	59	106	12
Vietnam	26	34	60	7
Singapore	17	9	26	3
India	4	17	21	2
US	7	13	20	2
Philippines	9	8	17	2
Thailand	9	4	13	2
Germany	7	5	12	1
South Korea	5	7	12	1
France	7	4	11	1
Japan	1	6	7	1
Mongolia	6	1	7	1
Honduras	2	5	7	1
Gambia	0	6	6	1
Belize	2	3	5	1
Nicaragua	1	4	5	1
Russia	4	1	5	1
others	45	43	88	9
Total	461	427	888	100

Note. Average age is 21 years old. Average months of stay = 18 months.

Average age of students is 21 years old, while the average stay in Taiwan is around 18 mounts. Besides the country of origin, the survey also asked for the participants to provide their level of Chinese language competencies. Table 3 shows that not all of the MCS are fluent with Mandarin Chinese, since some of them might came from regions that have their own dialects. Similar with the HKM students which primarily speaks Cantonese, while the OCS have an even more diverse background wherein most of them considers Mandarin Chinese as their second language.

Table 3

Participants' Chinese language competency level (N=888)

Chinese language competency	IS	MCS	OCS	HKM	Frequency	Percent
Just started studying	63	0	2	0	65	7
Less than 3 months	31	0	0	1	32	4
Less than 6 months	36	0	1	2	39	4
Less than 1 year	62	0	1	4	67	8
More than 1 year	90	3	2	11	106	12
More than 3 years	53	6	3	13	75	8
More than 5 years	38	50	21	17	126	14
Already fluent in Chinese	60	211	69	38	378	43
Total	433	270	99	86	888	100

4.2 Acculturative hassles

To better understand the hidden constructs behind the acculturative hassle survey items, exploratory factor analysis was used to analyze the inter-relationships among the variables (Hair, Black, Babin, Anderson, & Tatham, 2005). Then after structured equation modelling (SEM) with the help of the software Lisrel was accomplished to further explain the possibility of relationships among the items and latent variables (Schreiber,

Stage, King, Nora, & Barlow, 2006). Data collected from the survey was encoded and analyzed through the use of the software statistical package for social scientists (SPSS). Data was first screened for univariate outliers and missing data. These were then imputed using the expectation maximization (EM) algorithm of SPSS (Graham, 2009; Weaver & Maxwell, 2014).

During the factor analysis procedures, a total of 17 items were eliminated from the 32 items acculturative hassle survey. These items were deleted because they did not have a primary factor loading of .50 or above, and no cross-loading of .32 or above (Costello & Osborne, 2005). Then after, the factorability of the remaining 15 items is tested under several criteria for factor analysis. First, the 15 items were checked for inter-correlation with at least one item of .30 or above. Second, the Kaiser-Meyer-Olkin value was computed to be .90 well above the acceptable value of .50 (Kaiser, 1974). Lastly, the Barlett's test of sphericity was computed to be at 7,639.72 with significant Chi-square ($p < .000$) and a degrees freedom of 105.

The principal component analysis with varimax rotation was conducted, while the eigenvalues were computed to be greater than 1 (Costello & Osborne, 2005). Three factors accounting for 67.91% of the total variances were computed. Each of the factors *adverse feeling*, *struggles*, and *communication difficulties* accounted for 26.51%, 24.54%, and 16.85% of the variance respectively. A scree tests was also computed with the point of inflexion noted in Figure 1, further signifying the number of factors extracted from the items (Catell, 1966). Tables 4 show the various communalities of the items with values of greater than .400 (Worthington & Whittaker, 2006), together with the Cronbach alpha reliabilities of the factors (.866 to .899; signifying highly reliable results), percent variance, overall means, and means and standard deviations of each of the items. While, Table 5 shows the various factor loading (including the cross-loading) of each of the items.

Table 4

Acculturative hassle survey items (N=888)

Factors/Items	Communalities	*Mean*	*SD*
Adverse feelings (α = .898, 6 items, % variance = 26.51)		1.88	0.84
Ha_07. Being alienated by others	.761	1.85	1.02
Ha_03. Being let down (disappointment) by others	.675	1.94	1.05
Ha_02. Being isolated by others	.613	1.68	0.94
Ha_08. Feel of inequality	.674	1.94	1.11
Ha_09. Being taken advantage by others	.653	1.80	1.04
Ha_01. Being ignored by others	.628	2.08	1.05
Struggles (α = .866, 6 items, % variance = 24.54)		2.42	0.92
Ha_21. Not having enough time to meet my obligations	.756	2.42	1.16
Ha_23. Not being able to keep up with assigned tasks	.676	2.19	1.11
Ha_19. Not being able to concentrate	.706	2.30	1.12
Ha_20. Not being able to decide about my future career	.557	2.51	1.28
Ha_22. Not having enough sleep	.500	2.71	1.28
Ha_26. Not being able to attain expected academic grade	.481	2.41	1.18
Communication difficulties (α = .899, 3 items, % variance =16.85)		2.57	1.18
La_04. Difficulty in talking about yourself	.850	2.39	1.33
La_06. Difficulty in understanding jokes/humor	.843	2.56	1.20
La_05. Difficulty in making yourself understood	.811	2.77	1.35

Note. Overall α = .991, Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .902, Bartlett's Test of Sphericity = 7,639.72, $p < .000$, df = 105, Total variance = 67.91%

To further validate the acculturative hassle survey, SEM was used. Figure 2 shows the measurement model of the acculturative hassle survey with a Chi-square of 349.71 with $df = 87$, which is significant with $p < .000$ and a root mean square error of approximation (RMSEA) value of .058 all of which are within the acceptable factor analysis values in SEM (Schreiber et al., 2006). Table 6 shows several comparative fit indices (including other indices), such as: Normed Fit Index (NFI) = .98, Non-Normed Fit Index (NNFI) = .98, Comparative Fit Index (CFI) = .98, Incremental Fit Index (IFI) = .98, and Relative Fit Index (RFI) = .97; all of which are within the acceptable values (Hu & Bentler, 1999; MacCallum, Browne, & Sugawara, 1996). Lastly, Table 7 shows the

various standardized and unstandardized coefficients of the models, together with their corresponding *T* values and measurement errors (Fornell & Larcker, 1981), further describing fitness of the model.

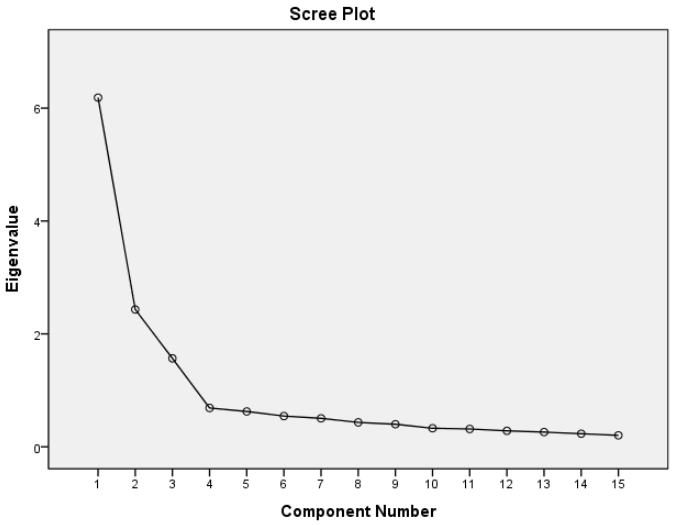

Figure 1. Scree plot for the acculturative hassle factors

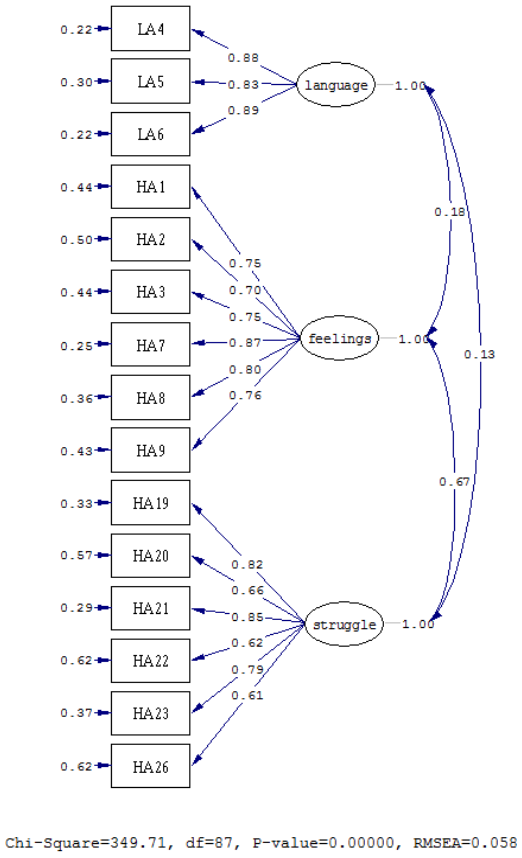

Figure 2. SEM measurement model for the acculturative hassle factors

Table 5

Factor loading for the acculturative hassle survey (N=888)

Items/Factors	Adverse feelings	Struggles	Language difficulties
Hassle_07	.807	.306	.059
Hassle_03	.790	.207	.095
Hassle_02	.769	.145	.018
Hassle_08	.764	.299	.044
Hassle_09	.762	.250	.094
Hassle_01	.743	.266	.074
Hassle_21	.260	.828	.050
Hassle_23	.298	.763	.067
Hassle_19	.308	.762	.103
Hassle_20	.136	.734	-.022
Hassle_22	.170	.686	.012
Hassle_26	.236	.652	-.006
Language_04	.046	.003	.921
Language_06	.095	.040	.912
Language_05	.091	.055	.894

Note. Extraction method: Principal Component Analysis, Rotation method: Varimax with Kaiser Normalization, Rotation converged in 5 iterations.

Table 6

Model fit for the acculturation hassle survey

Comparative fit index	Value	Absolute/predictive fit index	Value	Parsimonious fit index	Value
NFI	.98	Chi-square $\chi 2$	349.71	PNFI	.81
NNFI	.98	GFI	.95	PGFI	.69
CFI	.98	AGFI	.93	CN	312.25
IFI	.98	RMR	.045		
RFI	.97	SRMR	.034		
		RMSEA	.058		

Table 7

Standardized and unstandardized coefficients for the acculturation hassle survey

Observed variable (item)	Latent construct (factor)	β	error	*B*	*SE*	*T*
Hassle_07	Adverse feelings	.87	.25	.88	.03	31.73
Hassle_03		.75	.44	.78	.03	25.26
Hassle_02		.70	.50	.67	.03	23.33
Hassle_08		.80	.36	.88	.03	27.97
Hassle_09		.76	.43	.79	.03	25.79
Hassle_01		.75	.44	.78	.03	25.37
Hassle_21	Struggles	.85	.29	.98	.03	30.11
Hassle_23		.79	.37	.88	.03	27.41
Hassle_19		.82	.33	.92	.03	28.69
Hassle_20		.66	.57	.84	.04	21.09
Hassle_22		.62	.62	.78	.04	19.46
Hassle_26		.61	.62	.72	.04	19.37
Language_04	Communication difficulties	.83	.22	1.17	.04	32.06
Language_06		.89	.30	1.06	.03	32.21
Language_05		.83	.22	1.13	.04	29.56

Note. T values are all significant.

Within the acculturative hassle factors *adverse feelings* are items related to the students' daily living, issues resulting with negative emotional feelings. Table 4 shows that the overall mean of the adverse feelings factor is 1.88 with the survey items using a 5 scale Likert scale denoting the degree of perceived relation to statement (1=0%, 2=20%, 3=50%., 4=80%, and 5=100%). Hence, an overall average of 1.88 denotes that participants on average felt the adverse feelings barely around 20% of the time. As for the *struggles*, these are mostly the academic related hassles. Overall mean of the factor *struggles* is 2.42 denoting moderate academic related difficulties. However, the item *not having enough sleep* with a mean of 2.71 shows that more than half of the time, students are having difficulties with this issue. Lastly, *communication difficulties* are communication difficulties that students encounter daily with the highest overall mean of 2.57 implying also that almost half of the time, students are having these difficulties.

4.3 Acculturative strategies

The results of the revised 26 items EAAM were also encoded and analyzed through the use of the software SPSS. Data was first screened for univariate outliers and missing data imputed using the EM algorithm of SPSS (Graham, 2009; Weaver & Maxwell, 2014). During the factor analysis procedures, a total of 5 items were eliminated from the 26 items revised EAAM survey. These items were deleted because they did not have a primary factor loading of .50 or above, and no cross-loading of .32 or above (Costello & Osborne, 2005). Then after, the factorability of the remaining 21 items is tested under several criteria for factor analysis. First, the 21 items were checked for inter-correlation with at least one item of .30 or above. Second, the Kaiser-Meyer-Olkin value was computed to be .90 well above the acceptable value of .50 (Kaiser, 1974). Lastly, the Barlett's test of sphericity was computed to be at 10,649.36 with significant Chi-square ($p < .000$) and a degrees freedom of 210.

The principal component analysis with varimax rotation was then conducted, while the eigenvalues were

computed to be greater than 1 (Costello & Osborne, 2005). Three factors accounting for 67.08% of the total variances were computed. Each of the EAAM factors *marginalization*, *separation*, *assimilation*, and *integration* accounted for 27.56%, 14.91%, 14.26%, and 10.35% of the variance respectively. A scree tests was also computed with the point of inflexion noted in Figure 3, further signifying the number of factors extracted from the items (Catell, 1966). Tables 8 show the various communalities of the items with values of greater than .400 (Worthington & Whittaker, 2006), together with the Cronbach alpha reliabilities of the factors (.821 to .928; signifying highly reliable results), percent variance, overall means, and means and standard deviations of each of the items. While, Table 9 shows the various factor loading (including the cross-loading) of each of the items.

Table 8

Revised EAAM items (N=888)

Factors/Items	Communalities	*Mean*	*SD*
Marginalization (α = .928, 9 items, % variance = 27.56)		1.60	0.71
Ma_04. I find it hard to communicate with anyone	.747	1.68	0.93
Ma_06. People find it hard to accept me	.747	1.52	0.80
Ma_05. I find it hard to make friends	.722	1.72	1.02
Ma_08. People have difficulty understanding me	.679	1.56	0.85
Ma_01. I find it difficult to socialize with anybody	.670	1.81	0.98
Ma_03. I think no one understands me	.640	1.63	0.96
Ma_09. I am uncomfortable when I am around other people	.579	1.55	0.85
Ma_02. I feel that nobody likes me	.542	1.50	0.83
Ma_07. I don't trust anyone	.469	1.46	0.83
Separation (α = .839, 5 items, % variance = 14.91)		3.07	0.94
Se_06. I feel relax when I am around people from my country	.758	3.32	1.16
Se_05. I prefer to go out with someone from my country	.714	3.04	1.24
Se_03. I prefer going to gathering wherein most of the guest are from my country	.611	2.89	1.22
Se_08. I have more in common with my ethnic group than any other ethnicity	.496	3.26	1.22
Se_04. I feel that people who are from my country treat me as an equal, more so than the local Taiwan people does	.513	2.83	1.18
Assimilation (α = .878, 4 items, % variance = 14.26)		3.14	0.94
As_04. I find it easier to communicate my feelings to local Taiwan people	.771	2.83	1.12
As_03. I feel that local Taiwan people understand me better	.747	2.84	1.06
As_05. I feel more comfortable socializing with local Taiwan people	.755	3.32	1.13
As_02. I get along better with local Taiwan people	.683	3.58	1.10
Integration (α = .821, 3 items, % variance = 10.35)		4.06	0.88
In_02. I feel that both Taiwan friends and friends who are from my country value me	.789	4.01	0.99
In_01. I have both Taiwan friends and friends who are from my country	.703	4.15	1.08
In_03. I feel comfortable around Taiwan friends and friends who are from my country	.750	4.01	0.98

Note. Overall α = .885, Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .900, Bartlett's Test of Sphericity = 10,649.36, $p < .000$, df = 210, Total variance = 67.08%

To further validate the revised EAAM survey, SEM was used. Figure 4 shows the measurement model of the revised EAAM survey with a Chi-square of 774.78 with $df = 183$, which is significant with $p < .000$ and a RMSEA value of .060 all of which are within the acceptable factor analysis values in SEM (Schreiber et al., 2006). Table 10 shows several comparative fit indices (including other indices), such as: Normed Fit Index (NFI) = .96, Non-Normed Fit Index (NNFI) = .97, Comparative Fit Index (CFI) = .97, Incremental Fit Index (IFI) = .97, and Relative Fit Index (RFI) = .96; all of which are within the acceptable values (Hu & Bentler, 1999; MacCallum, Browne, & Sugawara, 1996). Lastly, Table 11 shows the various standardized and unstandardized coefficients of the models, together with their corresponding *T* values and measurement errors (Fornell & Larcker, 1981), further describing fitness of the model.

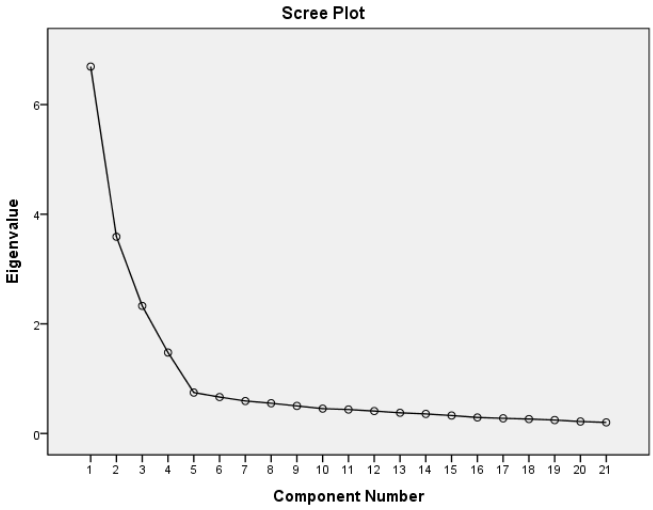

Figure 3. Scree plot for the revised EAAM factors

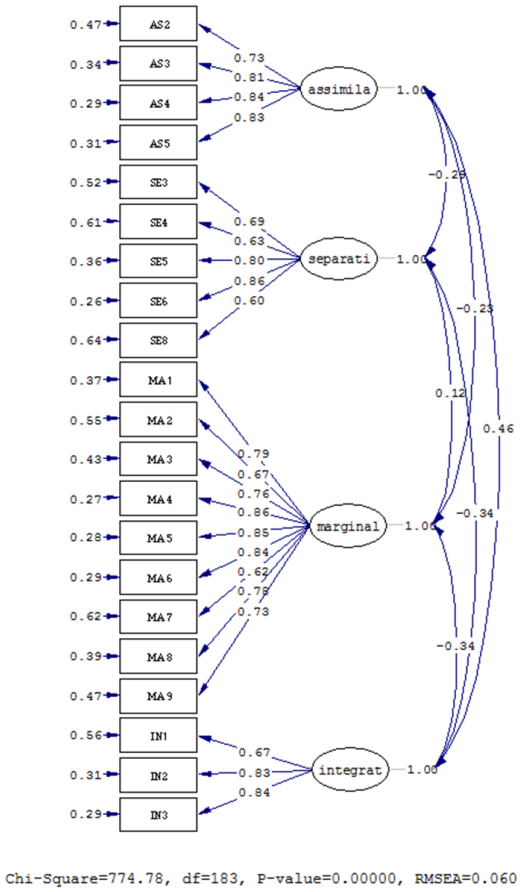

Figure 4. SEM measurement model for the revised EAAM factors

Table 9

Factor loading for the revised EAAM survey (N=888)

Items/Factors	Marginalization	Separation	Assimilation	Integration
Marginalization_04	.858	.020	-.091	-.037
Marginalization_06	.858	.055	-.087	-.022
Marginalization_05	.838	.056	-.104	-.081
Marginalization_08	.813	.014	-.080	-.102
Marginalization_01	.806	.060	-.115	-.055
Marginalization_03	.790	.058	-.007	-.115
Marginalization_09	.748	-.016	-.025	-.138
Marginalization_02	.733	.062	.003	-.019
Marginalization_07	.655	.029	-.128	-.150
Separation_06	.061	.848	-.182	-.049
Separation_05	.015	.835	-.020	-.123
Separation_03	.009	.779	-.037	-.047
Separation_08	.002	.702	-.046	-.042
Separation_04	.130	.687	-.107	-.118
Assimilation_04	-.069	-.172	.852	.103
Assimilation_03	-.050	-.091	.843	.158
Assimilation_05	-.094	-.124	.837	.174
Assimilation_02	-.182	-.002	.799	.105
Integration_02	-.172	-.186	.155	.837
Integration_01	-.087	-.026	.141	.821
Integration_03	-.208	-.190	.249	.780

Note. Extraction method: Principal Component Analysis, Rotation method: Varimax with Kaiser Normalization, Rotation converged in 5 iterations.

Table 10

Model fit for the revised EAAM survey

Comparative fit index	Value	Absolute/predictive fit index	Value	Parsimonious fit index	Value
NFI	.96	Chi-square $\chi 2$	774.78	PNFI	.84
NNFI	.97	GFI	.92	PGFI	.73
CFI	.97	AGFI	.90	CN	275.12
IFI	.97	RMR	.045		
RFI	.96	SRMR	.043		
		RMSEA	.060		

Table 11

Standardized and unstandardized coefficients for the revised EAAM survey

Observed variable (item)	Latent construct (factor)	β	error	*B*	*SE*	*T*
Marginalization_04	Marginalization	.86	.27	.79	.03	31.36
Marginalization_06		.84	.29	.67	.02	30.72
Marginalization_05		.85	.28	.85	.03	30.82
Marginalization_08		.78	.39	.66	.02	27.38
Marginalization_01		.79	.37	.77	.03	27.98
Marginalization_03		.76	.43	.72	.03	26.15
Marginalization_09		.83	.47	.62	.03	24.69
Marginalization_02		.67	.55	.56	.03	22.15
Marginalization_07		.62	.62	.50	.03	19.91
Separation_06	Separation	.86	.26	1.00	.03	29.97
Separation_05		.80	.36	.99	.04	27.08
Separation_03		.69	.52	.84	.04	22.25
Separation_08		.60	.64	.73	.04	18.66
Separation_04		.63	.61	.74	.04	19.53
Assimilation_04	Assimilation	.84	.29	.94	.03	29.60
Assimilation_03		.81	.34	.87	.03	28.24
Assimilation_05		.83	.31	.94	.03	28.99
Assimilation_02		.73	.47	.80	.03	24.03
Integration_02	Integration	.83	.31	.83	.03	27.60
Integration_01		.67	.56	.72	.03	20.87
Integration_03		.84	.29	.83	.03	28.10

Note. T values are all significant.

Table 8 shows that among the four acculturation strategies, students are quite *integrated* with an overall mean of 4.06 denoting that most of them retained the best of their home and host cultures. All of the three items in the factor integration garnered a score of greater than 4, which means that students felt the following *I feel that both Taiwan friends and friends who are from my country value me*, *I have both Taiwan friends and friends who are from my country*, and *I feel comfortable around Taiwan friends and friends who are from my country* around 80% of the time. These results are quite promising, since a key to successful integration is to break the ice and make friends with the host country's individuals. In addition, successful integration signifies that the students get to retain their home culture (including identity); therefore, cross-cultural sharing opportunity increases.

Interestingly, students are both somewhat *separated* with an overall mean of 3.07 and *assimilated* with an overall mean of 3.14, while *marginalization* with an overall mean of 1.60 signifying that students seldom felt that they are being marginalized; which is quite good. Highest marginalization item is *I find it difficult to socialize with anybody* with a mean of 1.81 and the lowest is *I don't trust anyone* with a mean of 1.46; these results show that students felt the marginalization items quite rarely (less than 20% of the time). Analysis for the acculturation strategies *assimilation* and *separation* will be more conclusive in the succeeding sections wherein comparison was made with the different student groups.

4.4 Students' depression, anxiety, and stress – comparative analysis among the different student groups

For the students' level of *depression*, anxiety, and stress, Table 10 shows that the overall mean for depression is 9.95, anxiety is 8.86, and stress is 7.26, which are somewhat above the normative scores for depression (6.34) and anxiety (4.70), while below the normative scores for stress (10.11) (Lovibond & Lovibond, 1995). Further comparison among the various student groups shows that HKM students scored the highest, while MCS students scored the lowest in depression, anxiety, and stress. In addition, Table 11 shows a more detailed level of analysis and comparison. Levels of depression, anxiety, and stress are shown with further accuracy in terms of their severity. Overall Table 11 shows that 59.1% or 525 of the students have normal depression level, while the rest of the 40.9% suffers from mild to extreme. Note that there are around 9.1% (7% + 2.1%) or 81 students are suffering from severe to extreme depressions, which are in need of much attention.

Table 10

Overall mean scores of various student groups (N=888)

Variables/Student groups		IS (*n*=433)	MCS (*n*=270)	OCS (*n*=99)	HKM (*n*=86)	Total (*N*=888)
Depression	*Mean*	10.93	7.31	11.18	**11.90**	9.95
	SD	7.08	5.67	6.85	8.24	7.00
Anxiety	*Mean*	9.69	6.39	9.80	**11.38**	8.86
	SD	6.79	5.29	5.94	7.79	6.60
Stress	*Mean*	7.82	5.21	8.30	**9.72**	7.26
	SD	7.20	5.25	7.00	8.56	6.94
Assimilation	*Mean*	2.97	**3.43**	2.94	3.30	3.14
	SD	1.00	0.79	0.88	0.90	0.94
Marginalization	*Mean*	1.64	1.40	**1.83**	1.81	1.60
	SD	0.72	0.57	0.84	0.76	0.71
Integration	*Mean*	**4.15**	3.97	3.96	3.97	4.06
	SD	0.87	0.86	0.85	0.94	0.88
Separation	*Mean*	2.96	3.12	**3.31**	3.20	3.07
	SD	0.93	0.86	1.08	0.95	0.94
Communication difficulties	*Mean*	**3.09**	2.16	1.79	2.19	2.57
	SD	1.30	0.72	0.79	0.95	1.18
Adverse feelings	*Mean*	1.95	1.70	1.96	**2.03**	1.88
	SD	0.90	0.69	0.87	0.88	0.84
Struggles	*Mean*	2.42	2.31	2.46	**2.75**	2.42
	SD	0.95	0.84	0.90	0.98	0.92

Note. Values of interests are in bold face.

For the levels of *anxiety*, Table 11 shows that 51.4% or 456 students are within the normal level of anxiety, while the rest of the 48.6% are suffering from mild to extreme anxiety. More importantly, there are around 17.4% (8.6% + 8.6%) or 152 students who are suffering from severe to extreme anxiety. For the levels of *stress*, around 85.5% or 759 of the students have normal stress level, while the remaining 14.5% are suffering from mild to extreme stress. In addition, there are only around 3.2% (2.7% + 0.5%) or 28 students who are suffering from severe to extreme stress. Further correlation analysis shown in Table 12 suggests that the levels of *depression*, *anxiety*, and *stress* are quite correlated with each other. Hence, this suggests that students with high levels of depression, anxiety, and stress might be the same group of individuals.

Table 12 shows the overall correlation of the DASS factors, acculturation strategies, and acculturative hassles. As mentioned earlier, results show that *depression*, *anxiety*, and *stress* are highly correlated with each other. This means that a depress student would very much likely to also be suffering from stress and anxiety. For the acculturation strategies, correlation analysis shows that *assimilation* is negatively correlated with the DASS factors; $r(886) = -.081$ $p < .016$ for depression, $r(886) = -.096$ $p < .004$ for anxiety, and $r(886) = -.069$ $p < .040$ for stress, while on the contrary *marginalization* is positively correlated with the DASS factors; $r(886) = .097$ $p < .004$ for *depression*, $r(886) = .104$ $p < .002$ for *anxiety*, and $r(886) = .072$ $p < .031$ for *stress*. This means that a student who is highly assimilated will tend to experienced very low depression, anxiety, and stress. In addition,

separation is positively correlated with *stress* with $r(886) = .073$ $p < .029$, which suggests that separated students are also suffering from stress.

Table 11

Students' level of depression, anxiety, and stress (N=888)

Student groups	Depression														
	Normal (0-9)			Mild (10-13)			Moderate (14-20)			Severe (21-27)			Extreme (28+)		
	f	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*
IS	234	54.0%	5.90	73	16.9%	11.42	81	18.7%	16.68	33	7.6%	23.61	12	2.8%	32.50
MCS	199	73.7%	4.52	32	11.9%	11.34	27	10.0%	15.81	11	4.1%	23.09	1	0.4%	32.00
OCS	51	51.5%	5.63	11	11.1%	11.00	28	28.3%	17.32	8	8.1%	22.75	1	1.0%	32.00
HKM	41	47.7%	4.90	11	12.8%	11.64	19	22.1%	16.42	10	11.6%	23.10	5	5.8%	30.20
Total (% of N)	**525**	**59.1%**	5.27	127	14.3%	11.39	155	17.5%	16.61	62	7.0%	23.32	19	2.1%	31.84
Student groups	Anxiety														
	Normal (0-7)			Mild (8-9)			Moderate (10-14)			Severe (15-19)			Extreme (20+)		
	f	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*
IS	192	44.3%	4.38	69	15.9%	8.55	92	21.2%	11.62	38	8.8%	16.84	42	9.7%	25.14
MCS	192	71.1%	3.71	27	10.0%	8.52	29	10.7%	11.93	13	4.8%	16.77	9	3.3%	24.11
OCS	38	38.4%	4.08	16	16.2%	8.31	22	22.2%	12.09	17	17.2%	16.12	6	6.1%	23.67
HKM	34	39.5%	4.15	12	14.0%	8.50	13	15.1%	12.46	8	9.3%	17.00	19	22.1%	23.05
Total (% of N)	**456**	**51.4%**	4.05	124	14.0%	8.51	156	17.6%	11.81	76	8.6%	16.68	76	8.6%	24.38
Student groups	Stress														
	Normal (0-14)			Mild (15-18)			Moderate (19-25)			Severe (26-33)			Extreme (34+)		
	f	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*	*f*	% within	*Mean*
IS	365	84.3%	5.30	33	7.6%	16.06	18	4.2%	22.17	14	3.2%	29.07	3	0.7%	37.33
MCS	251	93.0%	4.08	10	3.7%	17.00	7	2.6%	22.29	2	0.7%	29.50	0	0.0%	0.00
OCS	79	79.8%	5.54	13	13.1%	16.15	4	4.0%	21.00	3	3.0%	30.00	0	0.0%	0.00
HKM	64	74.4%	5.34	5	5.8%	16.20	11	12.8%	21.18	5	5.8%	28.80	1	1.2%	36.00
Total (% of N)	**759**	**85.5%**	4.93	61	6.9%	16.25	40	4.5%	21.80	24	2.7%	29.17	4	0.5%	37.00

Note. Depression, anxiety, and stress levels are based on Lovibond and Lovibond's (1995) values. Values of interest are in bold face.

Table 12

Overall correlations (N=888)

Variables		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean	9.95	8.86	7.26	3.14	1.60	4.06	3.07	2.57	1.88	2.42
	SD	7.00	6.60	6.94	0.94	0.71	0.88	0.94	1.18	0.84	0.92
Depression (1)	*r*	1									
	p										
Anxiety (2)	*r*	**.946**	1								
	p	.000									
Stress (3)	*r*	**.896**	**.914**	1							
	p	.000	.000								
Assimilation (4)	*r*	**-.081**	**-.096**	**-.069**	1						
	p	.016	.004	.040							
Marginalization (5)	*r*	**.097**	**.104**	**.072**	**-.223**	1					
	p	.004	.002	.031	.000						
Integration (6)	*r*	-.034	-.033	-.040	**.391**	**-.297**	1				
	p	.316	.323	.229	.000	.000					
Separation (7)	*r*	.054	.054	**.073**	**-.231**	**.119**	**-.272**	1			
	p	.107	.109	.029	.000	.000	.000				
Communication difficulties (8)	*r*	.015	.002	-.004	**-.255**	**.154**	**-.091**	**.071**	1		
	p	.663	.951	.898	.000	.000	.007	.035			
Adverse feelings (9)	*r*	.057	**.066**	.035	**-.155**	**.552**	**-.253**	**.125**	**.170**	1	
	p	.091	.049	.302	.000	.000	.000	.000	.000		
Struggles (10)	*r*	.014	.023	.012	**-.168**	**.467**	**-.197**	**.186**	**.102**	**.584**	1
	p	.667	.493	.722	.000	.000	.000	.000	.002	.000	

Note. Significant correlations are in bold face

Further correlation analysis shows that *assimilation* is negatively correlated with *marginalization* with $r(886) = -.223$ $p < .000$ and *separation* with $r(886) = -.231$ $p < .000$, while positively correlated with *integration* with $r(886) = .391$ $p < .000$ signifying that assimilated students are also somewhat integrated and vice versa. Further correlation trends among the various student groups also suggest such interpretation.

As for the acculturative hassle factors, the three factors are quite correlated with each other, which means these hassles are related with each other. Students who have *communication* trouble will probably be having *adverse feelings* and academic related *struggles*. Another interesting finding is that *assimilation* and *integration* is negatively correlated with the acculturative hassles, while *marginalization* and *separation* are positively correlated. These results further strengthen the assumption that *marginalization* and *separation* are somewhat caused by some or all of these acculturative hassles.

To further understand if the previous findings will also holds true when analysis is done with the different student groups; separate correlation analyses are achieved (see Tables 13 to 16). Table 13 shows the correlation result for the international students. Within the table, besides the acculturation strategies, similar trends hold true with a distinct finding of negative correlation between *communication* difficulties and *anxiety* with $r(886) = -.103$ $p < .032$ suggesting that less *communication* difficulties for the international students tend to cause *anxiety*. Further analysis on this finding is urged, since communication is said to be a quite important factor in the acculturation process.

Table 13

Correlations for IS variables (N=433)

Variables		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean	10.93	9.69	7.82	2.97	1.64	4.15	2.96	3.09	1.95	2.42
	SD	7.08	6.79	7.20	1.00	0.72	0.87	0.93	1.30	0.90	0.95
Depression (1)	*r*	1									
	p										
Anxiety (2)	*r*	**.943**	1								
	p	.000									
Stress (3)	*r*	**.899**	**.918**	1							
	p	.000	.000								
Assimilation (4)	*r*	-.019	-.028	-.022	1						
	p	.694	.562	.652							
Marginalization (5)	*r*	.062	.068	.059	**-.190**	1					
	p	.195	.159	.223	.000						
Integration (6)	*r*	-.041	-.030	-.045	**.397**	**-.311**	1				
	p	.393	.529	.347	.000	.000					
Separation (7)	*r*	.038	.034	.033	**-.230**	**.222**	**-.263**	1			
	p	.436	.485	.498	.000	.000	.000				
Communication difficulties (8)	*r*	-.081	**-.103**	-.082	**-.241**	**.128**	**-.127**	**.148**	1		
	p	.093	.032	.090	.000	.008	.008	.002			
Adverse feelings (9)	*r*	.051	.057	.035	**-.098**	**.541**	**-.279**	**.154**	**.132**	1	
	p	.287	.236	.463	.042	.000	.000	.001	.006		
Struggles (10)	*r*	.017	.023	.014	**-.171**	**.511**	**-.244**	**.223**	.065	**.578**	1
	p	.717	.634	.773	.000	.000	.000	.000	.180	.000	

Note. Significant correlations are in bold face

Table 14 shows the correlation results for the MCS, correlation trends are much similar with the previous overall findings with some minor differences. Similarly, Tables 15 and 16 also shows some similarity and differences. A very distinct consistency is that the DASS factors are quite correlated with each other, similarly the three acculturative hassles are also correlated with each other (except with the IS group). These findings continually suggest that the students' DASS are related with each other; indicating that when a student is stress out or suffering from anxiety, they tend to also be depressed. Furthermore, students who are having academic struggles also tend to be having communication difficulties and adverse feelings. Interestingly these acculturative hassles are not the cause for the students' depression and stress. Findings only suggests that

communication difficulties and *anxiety* are somewhat related. These findings all valid further analysis and interpretation, which is currently beyond the scope of the study.

Table 14

Correlations for MCS variables (N=270)

Variables		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean	7.31	6.39	5.21	3.43	1.40	3.97	3.12	2.16	1.70	2.31
	SD	5.67	5.29	5.25	0.79	0.57	0.86	0.86	0.72	0.69	0.84
Depression (1)	*r*	1									
	p										
Anxiety (2)	*r*	**.939**	1								
	p	.000									
Stress (3)	*r*	**.892**	**.889**	1							
	p	.000	.000								
Assimilation (4)	*r*	-.058	-.103	-.079	1						
	p	.340	.090	.196							
Marginalization (5)	*r*	**.122**	**.131**	.087	**-.213**	1					
	p	.046	.031	.152	.000						
Integration (6)	*r*	-.083	-.078	-.044	**.396**	**-.294**	1				
	p	.175	.201	.467	.000	.000					
Separation (7)	*r*	.104	.099	**.151**	**-.213**	-.011	**-.228**	1			
	p	.089	.106	.013	.000	.856	.000				
Communication difficulties (8)	*r*	.045	.049	.040	**-.149**	**.194**	**-.124**	**.139**	1		
	p	.463	.419	.511	.015	.001	.041	.023			
Adverse feelings (9)	*r*	.059	.066	.049	**-.156**	**.579**	**-.212**	.059	**.140**	1	
	p	.332	.282	.419	.010	.000	.000	.335	.021		
Struggles (10)	*r*	-.019	-.005	.032	**-.122**	**.336**	-.072	.106	**.137**	**.503**	1
	p	.757	.937	.597	.045	.000	.236	.082	.025	.000	

Note. Significant correlations are in bold face

Table 15

Correlations for OCS variables (n = 99)

Variables		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean	11.18	9.80	8.30	2.94	1.83	3.96	3.31	1.79	1.96	2.46
	SD	6.85	5.94	7.00	0.88	0.84	0.85	1.08	0.79	0.87	0.90
Depression (1)	*r*	1									
	p										
Anxiety (2)	*r*	**.931**	1								
	p	.000									
Stress (3)	*r*	**.867**	**.903**	1							
	p	.000	.000								
Assimilation (4)	*r*	-.126	-.118	-.152	1						
	p	.213	.245	.134							
Marginalization (5)	*r*	.032	.027	.013	**-.330**	1					
	p	.753	.794	.901	.001						
Integration (6)	*r*	-.029	-.012	-.052	**.522**	**-.402**	1				
	p	.777	.902	.610	.000	.000					
Separation (7)	*r*	.013	.014	.081	**-.368**	.052	**-.281**	1			
	p	.897	.894	.426	.000	.610	.005				
Communication difficulties (8)	*r*	.066	.046	.097	**-.310**	**.262**	**-.227**	.054	1		
	p	.516	.650	.342	.002	.009	.024	.597			
Adverse feelings (9)	*r*	-.019	-.016	-.021	-.166	**.466**	**-.314**	.084	**.302**	1	
	p	.848	.878	.839	.102	.000	.002	.409	.002		
Struggles (10)	*r*	.009	-.004	-.064	**-.259**	**.523**	**-.352**	**.233**	**.350**	**.662**	1
	p	.931	.967	.532	.010	.000	.000	.021	.000	.000	

Note. Significant correlations are in bold face

Table 16

Correlations for HKM variables (n = 86)

Variables		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean	11.90	11.38	9.72	3.30	1.81	3.97	3.20	2.19	2.03	2.75
	SD	8.24	7.79	8.56	0.90	0.76	0.94	0.95	0.95	0.88	0.98
Depression (1)	*r*	1									
	p										
Anxiety (2)	*r*	**.962**	1								
	p	.000									
Stress (3)	*r*	**.899**	**.922**	1							
	p	.000	.000								
Assimilation (4)	*r*	.014	-.050	.058	1						
	p	.897	.647	.595							
Marginalization (5)	*r*	-.099	-.081	-.140	-.060	1					
	p	.364	.458	.198	.581						
Integration (6)	*r*	-.034	-.086	-.076	**.542**	**-.251**	1				
	p	.756	.431	.487	.000	.020					
Separation (7)	*r*	.142	.153	.127	**-.331**	-.002	**-.339**	1			
	p	.192	.158	.244	.002	.988	.001				
Communication difficulties (8)	*r*	-.017	.044	.019	-.167	**.303**	**-.368**	**.240**	1		
	p	.876	.689	.859	.125	.005	.000	.026			
Adverse feelings (9)	*r*	-.145	-.117	-.175	**-.247**	**.577**	**-.285**	**.246**	**.279**	1	
	p	.184	.284	.108	.022	.000	.008	.022	.009		
Struggles (10)	*r*	-.130	-.127	-.152	-.165	**.407**	-.159	.146	**.245**	**.682**	1
	p	.233	.245	.163	.129	.000	.144	.181	.023	.000	

Note. Significant correlations are in bold face

To better understand if gender is an issue among the various factors; t-Test was accomplished. Table 17 shows that there are significant gender differences among the students' *assimilation* with Eta squared computed to be .012 suggesting small effect size (Cohen, 1988). Similarly, *integration* and *separation* also have significant gender differences with small effect size, suggesting that although there are statistical differences among the male and female students; their explain ability is not that conclusive.

Table 17

Gender differences among the variables (N=888)

Variables	Gender	*Mean*	*SD*	*F*	*t*	*p*	*MD*	*Eta squared*
Depression	Female	9.62	6.78	1.35	-1.50	.135	-0.70	.003
	Male	10.32	7.22					
Anxiety	Female	8.64	6.51	0.09	-1.03	.301	-0.46	.001
	Male	9.10	6.69					
Stress	Female	7.04	6.82	1.14	-1.00	.317	-0.47	.001
	Male	7.51	7.07					
Assimilation	Female	3.04	0.96	2.24	**-3.34**	.001	-0.21	.012
	Male	3.25	0.91					
Marginalization	Female	1.59	0.72	0.93	-0.45	.653	-0.02	.000
	Male	1.62	0.70					
Integration	Female	3.93	0.93	12.83	**-4.65**	.000	-0.27	.024
	Male	4.20	0.79					
Separation	Female	3.13	0.96	3.07	**2.13**	.033	0.13	.005
	Male	3.00	0.91					
Communication difficulties	Female	2.56	1.17	0.60	-0.20	.840	-0.02	.000
	Male	2.58	1.20					
Adverse feelings	Female	1.88	0.82	0.68	-0.07	.947	0.00	.000
	Male	1.88	0.87					
Struggles	Female	2.43	0.90	0.07	0.38	.708	0.02	.000
	Male	2.41	0.95					

Note. Significant gender differences are in bold face. df = 886, female = 461, male = 427

Table 17 also shows that gender is not an issue for the students' level of depression, anxiety, and stress. Similarly, acculturative hassles are not gender dependent. These means no matter what gender, students suffers from various hassles and emotional health issues. As for the effect of previous study abroad experiences, Table 18 shows that in general there are no significant differences among the various variables except for *separation* and *communication* difficulties. Results show that student who does not have previous study abroad experiences would tend to be more *separated* with Eta squared of .007 suggesting small effect (Cohen, 1988). While interestingly those who have previous study abroad experiences tend to have more *communication* difficulties with Eta squared of .013 also suggesting small effect (Cohen, 1988).

Table 18

Difference between students who have previous study abroad experiences (N=888)

Variables	Previous experience	*Mean*	*SD*	*F*	*t*	*p*	*MD*	*Eta squared*
Depression	No	9.83	7.11	2.63	-0.99	.321	-0.56	.001
	Yes	10.39	6.60					
Anxiety	No	8.84	6.72	4.58	-0.15	.877	-0.08	.000
	Yes	8.92	6.18					
Stress	No	7.18	7.00	0.23	-0.67	.502	-0.38	.001
	Yes	7.56	6.74					
Assimilation	No	3.14	0.93	1.93	-0.02	.982	0.00	.000
	Yes	3.14	0.99					
Marginalization	No	1.58	0.68	5.20	-1.75	.080	-0.10	.003
	Yes	1.68	0.80					
Integration	No	4.06	0.87	0.04	-0.09	.927	-0.01	.000
	Yes	4.06	0.89					
Separation	No	3.11	0.93	0.06	**2.51**	.012	0.19	.007
	Yes	2.92	0.95					
Communication difficulties	No	2.50	1.15	3.75	**-3.46**	.001	-0.33	.013
	Yes	2.83	1.25					
Adverse feelings	No	1.87	0.84	0.03	-0.82	.412	-0.06	.001
	Yes	1.93	0.87					
Struggles	No	2.44	0.91	0.98	0.77	.443	0.06	.001
	Yes	2.38	0.95					

Note. Significant differences are in bold face. df = 886, yes = 198, no = 690

For the differences among the students who are enrolled within a degree seeking program or not, Table 19 shows that besides *assimilation*, *separation*, and the acculturative hassles *communication* difficulties, the rests of the variables have all significant differences with Eta squared .005 to .018; suggesting small effect size. These results suggests that students who are in Taiwan for degree program tends to be suffering from the DASS factors and some acculturative hassles (academic related *struggles* and *adverse feelings*). Furthermore, these students tend to be more *integrated*, while some are *marginalized*. These findings seem to point out that duration of stay might be an important factor in the analysis.

Table 20 shows the correlation analysis for the various variables as compared with *duration* of stay (in months) and the students' level of Mandarin Chinese and English language proficiencies. For the effect of the duration of stay in Taiwan, Table 20 shows that duration of stay is positively correlated with the acculturation strategies of *assimilation* and *integration*, denoting that the longer a student stays in Taiwan the more they tend to be assimilated and integrated. In addition, duration of stay is negatively correlated with *separation*, denoting that the shorter you stay the more tendency of being separated. Interesting findings are the positive correlation between the acculturative hassles of *adverse feelings* and academic *struggles*, while negative correlation between *communication* difficulties. These all needs additional research and analysis in the future.

For the effect of the Chinese language competency levels, in general as a students' Chinese language improved they become more assimilated with $r(886) = .212$ $p < .000$; similarly, is that as the students' Chinese language improved the less they are having communication difficulties with $r(886) = -.619$ $p < .000$; which is

quite natural. As for the effect of the English language competency levels, interesting findings also shows that the higher the students' language competency level the more they are integrated, and the less they are marginalized and separated. As mentioned before, these results are beyond the scope of the current paper. It is urged that future researchers dwell on the issues of English language competencies. More importantly, English language competency levels is positively correlated with communication difficulties with $r(886) = .081$ $p < .016$; which is quite understandable. While, academic struggles is negatively correlated with English language competencies with $r(886) = -.108$ $p < .001$; as with the lessons are mostly done in the Chinese language.

Table 19

Difference between students who are enrolled in a degree program (N=888)

Variables	Degree seeking	*Mean*	*SD*	*F*	*t*	*p*	*MD*	*Eta squared*
Depression	No	9.28	6.74	0.41	**-2.20**	.028	-1.07	.005
	Yes	10.35	7.12					
Anxiety	No	8.14	6.29	1.04	**-2.51**	.012	-1.15	.007
	Yes	9.29	6.75					
Stress	No	6.63	6.65	2.88	**-2.09**	.037	-1.00	.005
	Yes	7.64	7.09					
Assimilation	No	3.17	0.96	0.57	0.82	.411	0.05	.001
	Yes	3.12	0.94					
Marginalization	No	1.48	0.65	7.38	**-4.06**	.000	-0.20	.018
	Yes	1.68	0.74					
Integration	No	3.96	0.87	0.50	**-2.58**	.010	-0.16	.007
	Yes	4.12	0.87					
Separation	No	3.12	0.87	4.87	1.16	.246	0.08	.002
	Yes	3.04	0.98					
Communication difficulties	No	2.61	1.14	4.24	0.76	.445	0.06	.001
	Yes	2.55	1.21					
Adverse feelings	No	1.75	0.78	9.95	**-3.64**	.000	-0.21	.015
	Yes	1.96	0.87					
Struggles	No	2.26	0.89	1.10	**-4.00**	.000	-0.25	.018
	Yes	2.52	0.92					

Note. Significant differences are in bold face. df = 886, yes = 558, no = 330

Table 20

Correlation analysis between Mandarin Chinese/English language competencies and duration of stay (N=888)

Variables		Mandarin Chinese level	English language level	Duration (in months)
Depress	*r*	-0.048	0.018	0.062
	p	0.157	0.584	0.066
Anxiety	*r*	-0.035	0.000	0.064
	p	0.295	0.990	0.055
Stress	*r*	-0.007	-0.003	0.027
	p	0.825	0.939	0.417
Assimilation	*r*	**0.212**	-0.026	**0.077**
	p	0.000	0.442	0.021
Marginalization	*r*	-0.048	**-0.139**	0.045
	p	0.156	0.000	0.180
Integration	*r*	-0.054	**0.137**	**0.117**
	p	0.111	0.000	0.000
Separation	*r*	0.058	**-0.070**	**-0.124**
	p	0.084	0.036	0.000
Communication difficulties	*r*	**-0.619**	**0.081**	**-0.114**
	p	0.000	0.016	0.001
Adverse feelings	*r*	-0.057	-0.043	**0.081**
	p	0.089	0.203	0.016
Struggles	*r*	0.030	**-0.108**	**0.117**
	p	0.377	0.001	0.000

Note. Significant differences are in bold face. df = 886

Lastly, for the statistical analysis of the various student groups and the variables, an analysis of variances (ANOVA) is accomplished. Table 21 shows the ANOVA results with significant differences among all the variables between the four student groups. Eta squared values are from .011 to .190 suggesting small (.01 to .05) to moderate (.06 to .13) effect sizes (Cohen, 1988).

Table 21

ANOVA test between student groups (N=888)

Variables/Student groups		IS	MCS	OCS	HKM	*SS*	*F*	*p*	*Eta squared*
Depression	*Mean*	10.93	7.31	11.18	11.90	2769.02	**20.07**	.000	.064
	SD	7.08	5.67	6.85	8.24				
IS	*MD*		**3.62**	-0.25	-0.96				
	p		.000	.988	.626				
MCS	*MD*			**-3.87**	**-4.58**				
	p			.000	.000				
OCS	*MD*				-0.71				
	p				.892				
Anxiety	*Mean*	9.69	6.39	9.80	11.38	2585.54	**21.14**	.000	.067
	SD	6.79	5.29	5.94	7.79				
IS	*MD*		**3.30**	-0.11	-1.70				
	p		.000	.999	.111				
MCS	*MD*			**-3.41**	**-5.00**				
	p			.000	.000				
OCS	*MD*				-1.59				
	p				.332				
Stress	*Mean*	7.82	5.21	8.30	9.72	1891.37	**13.65**	.000	.044
	SD	7.20	5.25	7.00	8.56				
IS	*MD*		**2.60**	-0.49	-1.91				
	p		.000	.918	.083				
MCS	*MD*			**-3.09**	**-4.51**				
	p			.001	.000				
OCS	*MD*				-1.42				
	p				.490				
Assimilation	*Mean*	2.97	3.43	2.94	3.30	42.32	**16.66**	.000	.054
	SD	1.00	0.79	0.88	0.90				
IS	*MD*		**-0.47**	0.03	**-0.33**				
	p		.000	.992	.013				
MCS	*MD*			**0.49**	0.13				
	p			.000	.637				
HKM	*MD*				**-0.36**				
	p				.040				
Marginalization	*Mean*	1.64	1.40	1.83	1.81	20.11	**13.77**	.000	.045
	SD	0.72	0.57	0.84	0.76				
IS	*MD*		**0.24**	-0.19	-0.17				
	p		.000	.062	.173				
MCS	*MD*			**-0.43**	**-0.40**				
	p			.000	.000				
OCS	*MD*				0.03				
	p				.995				
Integration	*Mean*	4.15	3.97	3.96	3.97	7.65	**3.36**	.018	.011
	SD	0.87	0.86	0.85	0.94				
IS	*MD*		**0.18**	0.20	0.18				
	p		.038	.175	.275				
MCS	*MD*			0.02	0.00				
	p			.998	1.000				
OCS	*MD*				-0.01				
	p				1.000				
Separation	*Mean*	2.96	3.12	3.31	3.20	13.39	**5.14**	.002	.017
	SD	0.93	0.86	1.08	0.95				
IS	*MD*		-0.16	**-0.35**	-0.25				
	p		.106	.004	.107				
MCS	*MD*			-0.19	-0.09				
	p			.326	.881				
OCS	*MD*				0.10				
	p				.885				

Table 21 … continued

Variables/Student groups		IS	MCS	OCS	HKM	*SS*	***F***	*p*	*Eta squared*
Communication difficulties	*Mean*	3.09	2.16	1.79	2.19	235.34	**69.05**	.000	.190
	SD	1.30	0.72	0.79	0.95				
IS	*MD*		**0.93**	**1.30**	**0.90**				
	p		.000	.000	.000				
MCS	*MD*			**0.37**	-0.03				
	p			.018	.996				
OCS	*MD*				-0.40				
	p				.055				
Adverse feelings	*Mean*	1.95	1.70	1.96	2.03	13.54	**6.45**	.000	.021
	SD	0.90	0.69	0.87	0.88				
IS	*MD*		**0.25**	-0.01	-0.08				
	p		.001	1.000	.859				
MCS	*MD*			**-0.26**	**-0.33**				
	p			.044	.008				
OCS	*MD*				-0.07				
	p				.935				
Struggles	*Mean*	2.42	2.31	2.46	2.75	13.12	**5.23**	.001	.017
	SD	0.95	0.84	0.90	0.98				
IS	*MD*		0.11	-0.05	**-0.33**				
	p		.403	.970	.011				
MCS	*MD*			-0.16	**-0.45**				
	p			.467	.001				
OCS	*MD*				-0.29				
	p				.140				

Note. Significant differences are in bold face. Post-hoc analysis = Tukey HSD, df = 3, 884, IS = 433, MCS = 270, OCS = 99, and HKM=86

Table 21 shows that the HKM scored highest in the three DASS scales for *depression*, *anxiety*, and *stress*. In addition, OCS is the most *marginalized* and *separated* student group among the foreign students, while the MCS is the most *assimilated*. Surprisingly the international students are the most *integrated*, while they also seem to have the most *communication* difficulties, while all the students moderately *struggles* with their academic related hassles.

5. Conclusions

The current study attempts to clarify some important issues regarding the acculturation processes of foreign students studying in Taiwan. As with the majority of the results are quite understandable and followed the trend of most acculturation studies. However, some interesting findings have come up, such as the issues of language competencies with the students' perceived hassles. In general the current study hopes that the findings are able to help both school administrators and future researchers in better understanding the issues within the study abroad processes. In essence, these insights should be able to provide a clear big picture of the major similarities and differences among the four foreign student groups studying in Taiwan.

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