Asian international students at an Australian University: mapping the paths between integrative motivation, competence in L2 communication, cross-cultural adaptation and persistence with structural equation modelling

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Asian international students at an Australian University: mapping the paths between integrative motivation, competence in L2 communication, cross-cultural adaptation and persistence with structural equation modelling

Baohua Yu*

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This study examined the interrelationships of integrative motivation, competence in second language (L2) communication, sociocultural adaptation, academic adaptation and persistence of international students at an Australian university. Structural equation modelling demonstrated that the integrative motivation of international students has a significant effect on competence in L2 communication, which played an influential role in predicting academic adaptation. Academic adaptation, which has been neglected in the literature on intercultural communication and second language acquisition, was itself identified as a major predictor of the sociocultural adaptation and persistence of international students. Implications for curriculum design and instructional practice on international students are discussed.

Keywords: integrative motivation; competence in L2 communication; academic adaptation; sociocultural adaptation; persistence; structural equation modelling

Introduction

An indisputable fact of life in the twenty-first century is that people are likely to have more contact than previously with people from other cultural backgrounds (Brislin 2001). As a reflection of such developments, growing numbers of students have crossed national boundaries to seek educational experiences (Hechanova-Alampay et al. 2002; Sam 2001). In the past two decades, many developed countries have hosted increasing numbers of international students, mainly from Asian countries, and particularly from China (Marginson and McBurnie 2004).

Among English-speaking destinations, Australia hosts the highest proportion of international students in higher education tertiary type A programmes in the Organisation for Economic Co-operation and Development (OECD). Moreover, Australia now accounts for one-tenth of the world market in international higher education (Bradley et al. 2008). Specifically, the numbers of international students in Australian higher education institutions have increased dramatically from 21,000 in 1989 to over 250,000 in 2007. More than 80% of international students in Australia are from Asia, and 21% of all international students are from China (Bradley et al. 2008).

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While international students make substantial contributions to the academic communities in their host countries – such as adding to their cultural diversity – and bring economic benefit to host countries, they often encounter many obstacles in adapting to their new learning environments, with many facing daunting language-related challenges (Devos 2003; Leder and Forgasz 2004; Skyrme 2007). For international students in English-speaking universities, adjustment challenges are primarily attributable to English language proficiency and culture (Andrade 2006). Scholars in the field of second language (henceforth L2) learning (e.g. Dörnyei 2005; Noels, Clément, and Pelletier 2001; Noels et al. 2000) suggest that motivation may be an important factor in determining success in learning a second language. Recently, Yu (2010) showed that integrative motivation, which is a complex of attitudinal, goal-directed, and motivational attributes, plays an important and positive role in determining whether international students are successful in language learning, and relatedly, in adapting to their host communities.

Research in the fields of cross-cultural psychology and social psychology has examined outcomes relating to acculturation, language attitudes and confidence in L2 communication when different ethnolinguistic groups come into contact with one another. Interestingly, minimal research in either of the above two fields has attempted to specifically investigate the potential academic problems and issues faced by international students, an area that has been widely addressed in the field of higher education (e.g. Astin 1993; Grayson 1997; Terenzini et al. 1996; Terenzini et al. 1995; Tinto 1993). In particular, Tinto (1993) took the concepts of academic and social integration into the institution as its core in the dropout process in his longitudinal model of institutional departure. In the present study, an attempt was made to integrate research in these three fields, namely cross-cultural psychology, social psychology of language and higher education. Specifically, this study tests a model that incorporates the integrative motivation and competence in L2 communication from social psychology of language, sociocultural adaptation from cross-cultural psychology and academic adaptation and persistence from higher education. Data are collected among Asian international students at a major Australian university because of two major reasons: Australia is a major host country of Asian international students (Bradley et al. 2008) and studies on such students have never attempted to incorporate constructs from three different fields like this study. With the data collected in a leading education provider in an urban context characterised by global, transcultural flows of international students, this paper addresses a critical gap in our research knowledge with regard to the causal relationships between language-related factors (integrative motivation and competence in L2 communication) and Asian international students’ adaptation (how they respond socioculturally and academically in Australia). Therefore, findings of this study will shed light on the linkages between fields of cross-cultural psychology and social psychology of language and higher education; this paper makes significant contribution to the literature of the above-mentioned three areas.

Overview of the literature

Academic adaptation, sociocultural adaptation and persistence of international students

Adaptation is defined as the process of adjustment to the existing conditions in the environment (Castro 2003). In the field of cross-cultural psychology, adaptation is
commonly referred to the level of ‘fit’ between the acculturating individual and the mainstream cultural environment within the framework of acculturation research (Berry and Sam 1997), and it is an ongoing process. Current literature suggests that there are two broad outcomes of cross-cultural adaptation: psychological and sociocultural (Ward and Kennedy 1993). Psychological adaptation associated with a stress and coping framework, refers to psychological well-being and satisfaction in a new cultural context; social-cultural adaptation, placed within a social learning paradigm, refers to the ability to ‘fit in’ or negotiate interactive aspects of the host culture (Ward and Kennedy 1993).

In a study of Chinese postgraduate students in the UK, Zhou and Todman (2008) found that psychological and sociocultural adaptation issues are related to academic adaptation issues for international students. More recently, academic adaptation has been found to be a core issue of cross-cultural adaptation (Yu 2009; Zeng 2006), which is closely and positively related to sociocultural adaptation (Yu 2010). Therefore, Yu (2009) suggested that academic adaptation should be taken as one important facet to study cross-cultural adaptation. However, academic adaptation, emphasising college impact on students’ positive learning outcome in higher education (Tinto 1993), has unfortunately been largely ignored in the literature and research of international students’ cross-cultural adaptation. Academic adaptation in this paper refers to an individual’s ability to be involved in positive educational outcomes (Tinto 1993). In a research on the academic adjustment of Chinese graduate students in US higher education, Dunn (2006) demonstrated that 10 factors were correlated with academic adaptation in her proposed international adjustment model. These 10 factors are academic major, English language proficiency, academic achievement, housing, extra-curricular involvement, peer relationship, interaction with faculty, pre-departure preparedness, finical and employment status and orientation and advising experiences.

In higher education, Tinto (1975) claimed that levels of academic and social adaptation were related to an additional variable, commitment to the institution and to goals associated with graduation and future career, and he further noted that as the level of institutional and goal commitment increased, there was a corresponding increase in the likelihood of persisting at the institution. In addition, research also supports that integration into the academic and social community has great impact on their intellectual, socio-personal growth and success in undergraduate education (Krause et al. 2005; Pascarella and Terenzini 2005; Yorke and Longden 2007). Adopting Tinto’s (1993) conceptualisation of academic adaptation and persistence, Yu (2009) found that academic adaptation was a primary predictor of both sociocultural adaptation and persistence in a study of international students in China.

In this line, it is plausible that higher levels of academic adaptation may lead to better sociocultural adaptation and a higher degree of persistence.

**Competence in L2 communication, sociocultural adaptation and academic adaptation**

Effective communication has been repeatedly found to facilitate successful cross-cultural adaptation (Gudykunst and Hammer 1988; McGuire and McDermott 1988). In any given situation, it may be the perceived communication competence, or
the belief that one can communicate effectively (McCroskey and Richmond 1990),
that will ultimately determine whether one chooses to communicate. Masgoret and
Ward (2006) established an interactive model of the relationships between foreign
language proficiency, communication competence, effective intercultural interaction,
and sociocultural adaptation. Basically, the model suggests that the core components
of sociocultural adaptation are L2 proficiency and communication competence,
supplemented by effective intercultural interaction. The underlying basis for the
model is that good L2 skills may facilitate adaptation through the establishment of
social support and interpersonal relationships (Ward 2004). The above studies laid a
basis to propose that competence in L2 communication might be positively related to
sociocultural adaptation.

Academic adjustment may also be influenced by L2-related factors for interna-
tional students (Furnham and Alibhai 1985; Holmes 2000). In a review of empirical
studies relating to the adjustment of international students to English-speaking
universities, Andrade (2006) concluded that difficulty with English language and
culture was the primary factor affecting academic adjustment. It is therefore
plausible to propose that competence in L2 communication is positively correlated
with academic adaptation.

Interrelationships between integrative motivation and other study variables

Educators, teachers, and parents in both western and non-western countries have
considered motivation to be an essential factor in successful second language
acquisition (SLA; Dörnyei 2005; Noels, Clément, and Pelletier 2001; Noels et al.
2000). Elements of integrative motivation, which refers to a positive affective
disposition towards the L2 community and a desire to achieve language proficiency
in order to be a member of, and to develop a sense of belonging to, the L2
community (Gardner and Lambert 1972; Lightbown and Spada 1999), may be
related to L2 proficiency.

Individuals with a high level of integrative motivation are likely to have a high
level of intercultural contact with the L2 community (Masgoret and Gardner 1999).
The social context model (Clément 1980; Clement and Kruidenier 1985) proposes
that frequent and pleasant contact with the L2 group may boost linguistic confidence
at varied levels, which, in turn, may be associated with increased communication
According to this model, it is plausible for integrative motivation to have a positive
relationship with competence in L2 communication.

A recent study found that integrative motivation played an important role in the
process of adaptation, and was a very good predictor of academic adaptation (Yu
2010). According to Dörnyei (2003), the core aspect of integrative disposition lies in
the psychological and emotional identification with the L2 community. That is to
say, students with a high degree of integrative motivation are likely to have to a high
degree of interaction with faculty members and students. According to Tinto’s
interactionist theory (Tinto 1993), such a high level of interaction with faculty
members will ultimately enhance academic adaptation and therefore persistence.
Consequently, it is plausible that integrative motivation is positively related to
academic adaptation and persistence.
The present study: hypotheses and a proposed causal model

The present study focused on international students from Asian countries. Previous research has suggested that although international students encounter difficulties in the adaptation process (Abe, Talbot, and Geelhoed 1998; Sawir 2005), these problems appear to be most acute among students from Asian countries (Abe, Talbot, and Geelhoed 1998; McGuire and McDermott 1988). Due to significant disparities in language, culture, and communication styles between most Asian countries and Australia, Asian students need to adjust rapidly, and cope both academically and socially. More recent studies of international students, conducted in Australia, identify problems in coping with English as a key source of difficulty in teaching and learning (e.g. McGuire and McDermott 1988; Robertson et al. 2000; Wong 2004). Given the high proportion of Asian international students in Australia, it is somewhat surprising that minimal research effort has been devoted to linking L2 factors to issues of adjustment. Therefore, an important purpose of the present study is to study how two important L2-related factors (integrative motivation and competence in L2 communication) contribute to successful cross-cultural adaptation.

In line with the foregoing discussion, a theoretical framework that links the hypothesised relationships, and which guided the study, is shown in Figure 1.

![Figure 1. Theoretical framework.](image)

As shown in the framework, seven specific hypotheses were posited for this study.

**Hypothesis 1.** Integrative motivation positively predicts competence in L2 communication.

**Hypothesis 2.** Integrative motivation positively predicts academic adaptation.

**Hypothesis 3.** Integrative motivation positively predicts persistence.

**Hypothesis 4.** Competence in L2 communication positively predicts academic adaptation.

**Hypothesis 5.** Competence in L2 communication positively predicts sociocultural adaptation.

**Hypothesis 6.** Academic adaptation positively predicts sociocultural adaptation.

**Hypothesis 7.** Academic adaptation positively predicts persistence.
Method

Instrument

All participants completed a survey instrument which assessed the integrative motivation, competence in L2 communication, academic adaptation, sociocultural adaptation and persistence of the participants. The instrument comprised scales from a number of existing instruments with proven psychometric properties. It also requested details on the following background characteristics of the participants: (1) age, (2) gender, (3) marital status, (4) level of education and (5) period of residence in Australia.

Integrative motivation. The seven-item scale from the Mini Attitude/Motivation Test Battery (AMTB) in Hashimoto’s (2002) study was an abbreviated version of the scale of the same name used by Gardner (1985). Following the approach used by Masgoret (2006), this study assessed integrative motivation by aggregating the items that assessed integrativeness (3 items, \( \alpha = 0.86 \) in MacIntyre and Charos 1996), motivation (3 items, \( \alpha = 0.65 \) in MacIntyre and Charos 1996) and instrumental orientation (1 item) in the AMTB. A high score on this scale indicated a positive affective disposition towards the Australian community and the desire to achieve English language proficiency in order to participate in, and to develop a sense of belonging to, the Australian community.

Perceived communication competence in English (\( \alpha = 0.98 \) in MacIntyre and Charos 1996). A 12-item self-judgement of communication competence developed by MacIntyre and Charos (1996) was used. A high score on this scale indicated strong ability to communicate in English, as evaluated by the respondent.

Academic adaptation (\( \alpha = 0.82 \) in Yu 2009). The 12-item Persistence/Voluntary Dropout Decision Scale (Pascarella and Terenzini 1980) was used. A high score on this scale indicated a high level of interaction with faculty, and good academic and intellectual development.

Socio-cultural adaptation (\( \alpha = 0.90 \) in Yu 2009). A 29-item Socio-cultural Adaptation Scale (SCAS) developed and refined by Ward and Kennedy (1999) was used. Ward and Kennedy concluded that the SCAS was a reliable and valid measurement. This measure tested how much difficulty students experienced in adjusting to Australian society and culture. A high score on this scale indicated a low level of difficulty in sociocultural adaptation.

Persistence (\( \alpha = 0.67 \) in Yu 2009). A 6-item Persistence/Voluntary Dropout Decision Scale (Pascarella and Terenzini 1980) was used. A high score on this scale indicated strong commitment to persistence in studying in the institution and achieving goals associated with graduation and career.

The instrument was approved by the relevant human research ethics committee at the university in which the research was conducted.

Participants and procedure

The instrument was administered to a group of Asian international students studying at the main campus of a major Australian university. Prior to administration, an invitation letter was sent to all faculties at the university explaining its purpose, and the confidential and voluntary nature of the study. Five faculties (Arts, Economics and Business, Education and Social Work, Engineering and Information, and Science and Medicine) offered support, and invited all Asian
international students in their faculties to participate in an online version of the survey. The Faculty of Economics and Business hosted the majority of international students at the university. Paper versions of the instrument were sent to those course instructors who were willing to allow their students to participate in the survey during class hours. Souvenirs were sent, on request, to students who completed the questionnaire.

A total of 261 Asian international students (178 females, 83 males) completed and returned the questionnaire. There were 38 undergraduates, 197 master level students, 22 undertaking doctorates or PhDs, and four others. They were aged between 18 and 40 (\(M = 25, \ SD = 4.28\)). Eighty-nine per cent were unmarried. The period of residence in Australia of the participants ranged from one month to eight years (\(M = 14.28, \ SD = 16.56\) years). The participants came from China, Bangladesh, Hong Kong, India, Indonesia, Japan, Jordan, Malaysia, Pakistan, Philippines, the Republic of Korea, Singapore, Taiwan, and Thailand.

**Results**

*Preliminary analysis*

The absolute value of the skewness and kurtosis of all the tested variables was in the range of 0.010–0.415 and 0.076–0.714 for this sample. As a value of less than two for skewness and seven for kurtosis suggests a normal distribution (Fabrigar et al. 1999), it appeared that generally, the distribution of the collected data did not deviate significantly from normality.

*Major analyses*

The testing of the theoretical framework required a number of steps: (1) the testing and confirmation of single-factor measurement models for all the constructs of interest, (2) the development of a full measurement model and (3) the estimation of a structural equation model of the theoretical framework. The maximum likelihood method of estimation was used in all cases, due to considerations of sample size, and its common use in structural equation modelling and related procedures (Hair et al. 2006).

*Test of the measurement model*

First of all, measurement models were estimated for all five constructs of interest using all the items that were originally designed to assess each construct. All the initially estimated measurement models had less than optimal fit, and needed to be modified by the progressive removal of the most problematic items. Items were removed from the measurement models when the following criteria (Byrne 1998; Weston and Gore 2006) were not met:

1. the t statistic of each measurement equation was at least 1.96;
2. the \(R^2\) value of each measurement equation was at least 0.30 (or 0.50 for those constructs that had more than 10 items designed to assess the construct) and not greater than 1.00; and
(3) most a priori specified goodness of fit statistics (i.e. CFI, NNFI, SRMR, and RMSEA) were ‘good’.

For all five factors, single-factor measurement models with good fit were eventually developed, with each factor comprising at least four items. All measurement models had CFI values of at least 0.99, NNFI values of at least 0.97, SRMR values of less than 0.06 and RMSEA values of less than 0.09.

Thereafter, a full measurement model was estimated, which combined the five single-factor measurement models. Some of the measurement equations in the initially estimated model had \( R^2 \) values of less than 0.30 (two loading onto Integrative Motivation and four loading onto Socio-Cultural Adaptation), and the corresponding items needed to be progressively removed. The resulting model from these procedures had good general fit (\( \chi^2 = 473.66, \text{df} = 242, p = 0.00; \chi^2/\text{df} = 1.96; \text{CFI} = 0.98; \text{NNFI} = 0.98; \text{SRMR} = 0.07; \text{RMSEA} = 0.06 \). Table 1 shows the factors, factor loadings and error variances of this model.

Table 1. Full measurement model: means, standard deviations, factor loadings and error variances.

<table>
<thead>
<tr>
<th>Factors/items</th>
<th>M</th>
<th>SD</th>
<th>Loading</th>
<th>Error Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative motivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1 My feelings about learning English in order to interact with members of the Australian community</td>
<td>3.67</td>
<td>0.95</td>
<td>0.96</td>
<td>0.08</td>
</tr>
<tr>
<td>M2 My interest in foreign languages</td>
<td>3.98</td>
<td>0.85</td>
<td>0.89</td>
<td>0.20</td>
</tr>
<tr>
<td>M3 My attitude towards members of the Australian community</td>
<td>3.69</td>
<td>0.85</td>
<td>0.92</td>
<td>0.15</td>
</tr>
<tr>
<td>M5 My desire to learn English</td>
<td>3.97</td>
<td>0.92</td>
<td>0.86</td>
<td>0.27</td>
</tr>
<tr>
<td>Socio-cultural adaptation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC18 Understanding ethnic or cultural differences</td>
<td>3.62</td>
<td>1.00</td>
<td>0.61</td>
<td>0.63</td>
</tr>
<tr>
<td>SC20 Worshipping</td>
<td>3.71</td>
<td>0.99</td>
<td>0.69</td>
<td>0.52</td>
</tr>
<tr>
<td>SC26 Understanding the Australian world view</td>
<td>3.61</td>
<td>1.00</td>
<td>0.78</td>
<td>0.40</td>
</tr>
<tr>
<td>SC27 Understanding Australian family relationships</td>
<td>3.58</td>
<td>1.01</td>
<td>0.64</td>
<td>0.60</td>
</tr>
<tr>
<td>SC29 Being able to see two sides of an inter-cultural issue</td>
<td>3.84</td>
<td>0.95</td>
<td>0.75</td>
<td>0.43</td>
</tr>
<tr>
<td>Academic adaptation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1 I am satisfied with the extent of my intellectual development since enrolling in this university</td>
<td>3.55</td>
<td>0.96</td>
<td>0.75</td>
<td>0.44</td>
</tr>
<tr>
<td>A2 My academic experience has had a positive influence on my intellectual growth and interest in ideas.</td>
<td>3.73</td>
<td>0.93</td>
<td>0.75</td>
<td>0.44</td>
</tr>
<tr>
<td>A3 I am satisfied with my academic experience at this university.</td>
<td>3.49</td>
<td>0.93</td>
<td>0.56</td>
<td>0.68</td>
</tr>
<tr>
<td>A5 My interest in ideas and intellectual matters has increased since coming to this university.</td>
<td>3.58</td>
<td>0.93</td>
<td>0.57</td>
<td>0.68</td>
</tr>
<tr>
<td>Persistence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S13 It is important for me to graduate from this university.</td>
<td>4.30</td>
<td>0.81</td>
<td>0.60</td>
<td>0.64</td>
</tr>
<tr>
<td>S14 I am confident that I made the right decision in choosing to attend this university.</td>
<td>3.76</td>
<td>0.98</td>
<td>0.58</td>
<td>0.66</td>
</tr>
<tr>
<td>S15 It is likely that I will continue to register at this university.</td>
<td>3.67</td>
<td>1.02</td>
<td>0.76</td>
<td>0.42</td>
</tr>
<tr>
<td>S17 I have no idea at all what I want to major in*.</td>
<td>4.23</td>
<td>0.70</td>
<td>0.82</td>
<td>0.32</td>
</tr>
<tr>
<td>S18 Getting good grades is not important to me*.</td>
<td>4.17</td>
<td>0.72</td>
<td>0.69</td>
<td>0.53</td>
</tr>
</tbody>
</table>
Construct validity and reliability

The convergent validity of the factors in the full measurement model appeared to be adequate, as all factor loadings exceeded 0.50 (Hair et al. 2006). The Cronbach alpha values of the factors, which ranged from 0.68 to 0.91 (Table 2), suggested that all the factors in the model were also reliable.

Test of the full structural model

Upon the completion of the preparatory analysis, a structural equation model could be estimated of the original theoretical framework. The initial structural model was well-fitting. Moreover, no problems could be identified with the individual measurement models, and no path additions were suggested by the modification indices or standardised residuals. Nevertheless, three of the paths (i.e., from integrative motivation to persistence, from competence in L2 communication to sociocultural adaptation, and from integrative motivation to academic adaptation) were statistically non-significant, and needed to be progressively trimmed. The structural model that emerged, which is outlined in Figure 2, had very good fit (i.e. $\chi^2 = 478.78$, $df = 248$, $p = 0.00$; $\chi^2/df = 1.93$; NNFI = 0.98; CFI = 0.98; SRMR = 0.07; RMSEA = 0.06), and was accepted as the final model.

Table 1 (Continued)

<table>
<thead>
<tr>
<th>Factors/items</th>
<th>M</th>
<th>SD</th>
<th>Loading</th>
<th>Error Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence in L2 communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3 Competence to talk in a large meeting (about 10 people) of friends</td>
<td>3.52</td>
<td>0.98</td>
<td>0.67</td>
<td>0.55</td>
</tr>
<tr>
<td>C6 Competence to talk in a large meeting (about 10 people) of acquaintances</td>
<td>3.51</td>
<td>0.91</td>
<td>0.79</td>
<td>0.38</td>
</tr>
<tr>
<td>C8 Competence to speak in public to a group (about 30 people) of friends</td>
<td>3.39</td>
<td>1.01</td>
<td>0.68</td>
<td>0.54</td>
</tr>
<tr>
<td>C9 Competence to talk in a small group (about 5 people) of acquaintances</td>
<td>3.68</td>
<td>0.89</td>
<td>0.58</td>
<td>0.67</td>
</tr>
<tr>
<td>C10 Competence to talk in a large meeting (about 10 people) of strangers</td>
<td>3.20</td>
<td>1.03</td>
<td>0.75</td>
<td>0.43</td>
</tr>
<tr>
<td>C12 Competence to speak in public to a group (about 30 people) of acquaintances</td>
<td>3.26</td>
<td>1.00</td>
<td>0.57</td>
<td>0.67</td>
</tr>
</tbody>
</table>

*Reverse coded.

Table 2. Factor correlations.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Integrative motivation</td>
<td><strong>0.75</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Socio-cultural adaptation</td>
<td>0.14</td>
<td><strong>0.84</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Academic adaptation</td>
<td>0.26*</td>
<td>0.48*</td>
<td><strong>0.81</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Persistence</td>
<td>0.32*</td>
<td>0.26*</td>
<td>0.58*</td>
<td><strong>0.68</strong></td>
<td></td>
</tr>
<tr>
<td>5. Competence in L2 communication</td>
<td>0.21*</td>
<td>0.42*</td>
<td>0.41*</td>
<td>0.29*</td>
<td><strong>0.91</strong></td>
</tr>
</tbody>
</table>

*p <0.01. Numbers in bold indicate the reliabilities of the scales.
The purpose of the study was to link academic adaptation (Tinto 1993) with sociocultural adaptation (Ward and Kennedy 1999), and to relate them to Gardner’s (2005) integrative motivation in L2 learning, perceived competence in L2 communication (McCroskey and Richmond 1990) and Tinto’s conception of persistence (Tinto 1993) in the interest of developing a more comprehensive theoretical account of the general cross-cultural adaptation of Asian international students in Australia. More specifically, the primary objective of the study was to consider how academic and sociocultural adaptation was influenced not only by integrative motivation but also by competence in communicating in the language of the host community, and how academic adaptation affected sociocultural adaptation and persistence. In this section, we discuss the findings along with limitations, directions for future research and implications.

The results of the structural equation modelling analysis supported four important paths outlined in the original model: from integrative motivation to competence in L2 communication, from competence in L2 communication to academic adaptation, from academic adaptation to sociocultural adaptation and from academic adaptation to persistence. In other words, this study supported the following four hypotheses: integrative motivation positively predicts competence in L2 communication; competence in L2 communication positively predicts academic adaptation; academic adaptation positively predicts the sociocultural adaptation and persistence of international students.

Consistent with our prediction, a positive relationship was found between integrative motivation and competence in L2 communication. This study confirms the proposed direction of this relationship: it is the enhancement of integrative motivation that leads to a superior competence in L2 communication. This finding lends support to Dörnyei (2001) and Oxford and Ehrman (1992), who suggested that learners’ attitudes and motivation were important for increased L2 competence and proficiency. Students with a high degree of integrative motivation will have a high
degree of interaction with the L2 community including teachers, classmates and the local community. A greater interaction with the host community helps improve their communication competence in the host language (Clement, Noels, and Deneault 2001). Dörnyei (2005) indicated that motivation not only provided learners with driving force in language learning, but also could compensate for some personal or situational deficiencies faced by learners. Learners with integrative motivation can overcome difficulties such as second language apprehension to develop ‘genuine interest in learning the second language in order to come closer to the other language community’ (Gardner 2001, 5), and achieve a high level of competence in L2 communication.

The second path was more intriguing for scholars of communication and higher education as it demonstrated the important role of competence in L2 communication on academic adaptation. Previous studies have consistently reported that effective communication, successful interpersonal relationships with members of the host community and previous cross-cultural experiences were crucial predictors of cross-cultural adaptation (Gudykunst and Hammer 1988; McGuire and McDermott 1988). Academic adaptation together with sociocultural adaptation were two important facets of cross-cultural adaptation (Tinto 1993; Yu 2010). Results observed in the present study confirmed and extended the theoretical work by Masgoret and Ward (2006) by highlighting the facilitating role of competence in L2 communication in academic adaptation. Such a finding is new to research in communication and higher education, suggesting future research on international students needs to include academic adaptation as a core factor to measure adaptation.

This study found two more significant paths: one was from academic adaptation to sociocultural adaptation and the other from academic adaptation to persistence, which confirmed previous research that academic success affected significantly on students’ sociocultural adaptation (Li and Kaye 1998) and persistence (Tinto 1993; Yu 2009). Such findings implied that better intellectual development and interaction with faculty was associated with better cultural competence or behavioural adaptability in coping with social situations, and stronger commitments to persistence in studying and to goals associated with graduation and career. This underpinned the fact that academic adaptation was a core issue for the cross-cultural adjustment of international students.

In addition to the above-mentioned four significant paths, three other paths are also outlined in the original model, namely one from integrative motivation to academic adaptation, one from integrative motivation to persistence and one from L2 communication competence to sociocultural adaptation. These three paths were found to be insignificant in the structural equation model. This finding can accomplish increased theoretical clarity: integrative motivation is an antecedent of competence in L2 communication but indirectly affects academic adaptation/persistence. Such a finding can be explained through Dörnyei’s (2001) theorising that motivation is only a concept that explains why people behave as they do rather than how successful their behaviour will be. As to the third insignificant path, from L2 communication competence to sociocultural adaptation, we can infer that sociocultural adaptation is more dependent on other variables such as academic adaptation rather than L2 communication competence.

Some limitations of the current study include the fact that the research was conducted in only one Australian university. Consequently, generalisation of the
findings to all international students in Australia is not possible. In addition, this study was cross-sectional in nature, which did not allow for the testing of causal relationships. A longitudinal design may be necessary before we can confidently claim causality in any of predictive relationships that were studied (Bong 1996). Other limitations include the reliance on self-reports (which may lead to a single source bias in the data), a high percentage of students undertaking postgraduate studies (which may skew the result) and the possibility of the existence of other structural equation models with these variables. Nevertheless, it is noted that the original theoretical framework that guided the study was based firmly on theory and logical argument.

Despite these limitations, the study provided meaningful insights into the complex process of cross-cultural adaptation of international students in Australia. From a theoretical standpoint, results from this study suggest that it may be important for future research to integrate literature from the fields of cross-cultural psychology, social psychology of language, and higher education, to investigate international students studying in a foreign country.

There may be some practical implications for teachers of foreign students. For example, integrative motivation could be enhanced through classroom learning and teaching, which should keep student interest and desire for L2 learning as the focus. Teachers may need to be mindful of this in terms of curriculum design and classroom instruction. First of all, teachers can start to explore internationalising the curriculum in terms of teaching and learning in order to make their teaching accessible and interesting not only by domestic students, but also by international students including those with low integrative motivation. Specific strategies may include developing intercultural perspectives, encouraging effective communication with students from diverse cultural backgrounds and optimising opportunities in planning and delivering curriculum to enhance international students learning and create inclusive supportive learning environments for all students. Secondly, in classroom teaching, teacher needs to create opportunities for small group participation and encourage contributions in class. As second language learners of English, international students need to be given adequate time to prepare responses. There are some strategies: (1) teachers should briefly summarise the discussion from time to time, highlighting the key points, so that the students can follow the discussion; (2) teachers may ask students to prepare some responses for the next tutorial or seminar (3) teachers may set key questions with the reading material so that students can prepare their answer before the class, which will give them greater confidence in contributing to any discussion. Through all kinds of involvement in the classroom activity, students even with low integrative motivation may find their studying in an L2 environment very interesting. Once their interest have been increased, they will invest more time and interest in studying and contribute more in classroom learning. Ultimately, their integrative motivation will be enhanced during overseas study.

Considering the crucial role of competence in English communication in the process of academic adaptation, language support programmes such as face-to-face L2 communication outside classrooms and language learning supports need to be designed for international students (Li, Chen, and Duanmu 2009). On administrative level, it may be useful for faculties or departments to establish a ‘buddy’ system in which international students are paired with at least one local student and they are given opportunities to involve with local students in sociocultural and academic activities. Such a system may increase more cultural contacts, which will help
international students to understand local cultures and customs. Moreover, frequent use of the L2 will reduce students’ language-related anxiety and increase their confidence in communicating in L2. Furthermore, in order to create a culturally diversified classroom and to increase intercultural communication opportunities, faculties may consider taking ethnicity into consideration when recruiting international students in a certain discipline. A balance may need to be achieved between the proportion of international and local students. On the teaching level, teachers should structure group tasks so that international and domestic students are grouped together. In each small group, students are required to assign roles for each group member such as leading the discussion, keeping the time, taking notes and reporting back. This allows everyone to have a role in the group. Whenever it is possible, teachers try to develop tasks that increase opportunities for domestic and international students to interact. In short, teachers should know not only the needs of international students, but also how to best address those needs in order to enhance students’ integrative motivation in L2 and improve their competence in L2 communication through internationalising curriculum and effective classroom teaching.

Note
1. Tertiary type A programmes are designed to provide sufficient qualifications for entry into advanced research programmes and professions with high-skill requirements, such as medicine, dentistry, or architecture. Programmes have a minimum cumulative duration of three years full-time equivalent, although they typically last four or more years (OECD 2010).

References


