

Factors Impacting Information Seeking Behaviour of International Students: Towards A Conceptual Model

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Abstract

International students live and study in a new environment, so there might be different factors impacting how they seek out information. As there are many resources available in the information age; it becomes important to understand the dynamics of international students' information seeking behaviour. This paper is concerned with the factors affecting ISB of international students.

This paper proposes a conceptual model based on a comprehensive and critical literature review on existing models and theories of ISB. The proposed conceptual model shows three areas which may impact on international students' ISB, namely: External Context, Cognitive Approach and Internal Context.

This model has two contributions. Theoretically, it combines the literature on international students' studies and ISB models to provide a conceptual model. Practically, using this model provides insights for government and universities into international students' needs in seeking information especially during the transition period to enhance their social and educational adjustment.

Key words:

International Student, Information Seeking Behaviour, Online Behaviour, Conceptual Model, Literature Review

Introduction

Australia is one of the forerunner countries in terms of the international students' participation in higher education. There are more than 200,000 international students in the Australian higher education sector (Australian Education International, 2011). The number of international student have increased by almost 15% per year since 1980's and around one in five student is a full-tuition-paying international student in Australia (Marginson, 2002, Marginson, 2006).

The Australian government has recognised the benefits of international students and developed strategies to attract international students. The government wants to ensure that students have a high-quality education and social experience in Australia. For this purpose, the government has made attempts to identify international students' challenges to respond to them. Based on the report of COAG (Council of Australian Governments, 2010 – 2014) one of the international students' issues is the **quality and accessibility of information**. Also in the ESOS (Education Services for Overseas Students) legislation, the government maintained that students need **comprehensive and up-to-date information** for studying, living and working in Australia (Australian Education International, 2011). Also from the researcher point of view, Pedersen (1991:24) argued that: "International students are likely to experience more problems than students in general and have access to fewer resources to help them". Although the Pedersen paper is a very old one, many of the issues continue to present a challenge even today as international students try to navigate the variety of resources in an unfamiliar environment and culture. Therefore, this paper seeks to explore international students' challenges regarding accessing and obtaining information. These challenges may have impact on their Information Seeking Behaviour.

What is the Information Seeking Behaviour?

Information seeking behaviour has been defined in different ways by different authors. Wilson defined it as "those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way and using or transferring that information" (Wilson, 1999:249). It is also defined as "an aspect of scholarly work of most interest to academic librarians who strive to develop collections, services, and organizational structures that facilitate information seeking" (Wiberley, 1989:623) as stated in (Kakai, Ikoja–Odongo and Kigongo–Bukonya, 2004).

Nowadays, sources for information which could be defined as a "carrier of information" (Agarwal, 2011) are highly diverse, ranging from traditional sources like a person or a book to the state of the art types like e-libraries and search engines. It is obvious that in the information age, using the electronic resources is a part of the everyday life. Also, since the number of these e-resources is growing so fast and the amount of data is enormous, it is even more important to understand how user groups can access relevant information to meet their needs (Gaur and Sharma, 2010). This is one of the most important practical implications of Information Seeking Behaviours (ISB).

The Importance of Information Seeking Behaviour of International Students

International students may face more problems in comparison with local students in navigating their academic and everyday life (Dalglish and Chan, 2005, Deumert, Marginson, Nyland, Ramia and Sawir, 2005). These researchers argue that because international students are living in a culturally different environment and often working between two different systems and cultures, they face greater challenges in navigating everyday life and also to meet academic expectations (Andrade, 2006, Sawir, Marginson, Deumert, Nyland and Ramia, 2008, Deumert et al., 2005). In part, this also has to do with their ability to access the most relevant information when they need it, and even knowing what information they need to make their decisions in a different culture. However, there are not many studies that have looked at the information seeking behaviours and difficulties of international students.

There are also some difficulties in providing information to international students. International students are working in a new environment and need to find information about everything because many issues are new for them. Traditionally, this tends to be provided at orientation programs at their educational institutions. However there are some difficulties in providing information for international students in the orientation. There are lots of students in orientation program from all around the world with different information needs, so catering each person's need is very difficult. Also students usually face information overload in orientation program which may cause cognitive fatigue for them (Mori, 2000) . Moreover, as orientation programs are usually short and happens at the very early stage of student arrival, it may lead to faulty decision because they might not remember much of the information provided at that point in time (Westwood and Barker, 1990). Therefore, it would seem that understanding international students' ISB is of interest because it can inform educational institutions how best to provide information to students. More importantly, this could help institutions understand how to help their international students improve and develop their ISB to find the most relevant information as they navigate a new complex environment, in a timely manner.

There are various challenges that increase the complexity of both providing relevant information to the students (from the institution's point of view) and information seeking (from the international students' point of view). These students' information seeking behaviour may be affected by their emotions, self-confidence in a new system, understanding of assignments and subjects, amongst other issues (Hughes, 2005, Robertson, Line, Jones and Thomas, 2000, Mullins, Quintrell and Hancock, 1995, Hewett and McRae, 2007). These challenges outline here:

English Level/Linguistic Problems: The most frequent challenge of international students is of a **linguistic** nature (Hughes, 2005, Robertson et al., 2000, Baron and strout-Dapaz, 2001, Andrade, 2006, Arkoudis and Tran, 2010). The relatively limited English vocabulary of some students may cause significant difficulties in interpreting assignment topics and in identifying valid search terms, especially synonyms. It also means an inability to quickly scan a search results list or abstract or journal articles, so their evaluation is very time-consuming and effort-intensive, which impacts on their research abilities (Hughes, 2005, Zoe and DiMartino, 2000). In addition it has negative impact on the relationship with local (Australian) students (Ujitani and Volet, 2008, Hughes, 2002). Also while this inability has been reported to cause damage to the self-confidence of international students in participating in classroom and making friends with local students (Liao, Finn and Lu, 2007), it potentially also limits their ability to seek out relevant useful information through word of mouth with locals.

Intercultural Adaptation Problems: Cultural differences may also have impact on how international students evaluate information and on teaching/learning relationships. According to the study of Fong and Burton (2006), different cultural backgrounds of users affect their information seeking behaviour. Also Liao, Finn and Lu (2007) claimed that "different cultural body language and gestures, social class and religious differences, traditional passive roles of learners, and shyness about approaching authority figures for assistance can make barriers for library access and information seeking behaviour".

In addition, cultural differences of them could produce variety of culture-specific learning styles and information-seeking behaviour (Zoe and DiMartino, 2000). In some countries finding information is more depends on word of mouth as these societies are more collectivistic, while Australia has relatively individualistic culture which is more based on individual searching and seeking information. It is because "In collectivistic cultures, communication and decision making are more closely related to peer and societal expectations than in individualistic cultures" (Gray, Chang and Kennedy, 2010). This has potential implications for institutions' practice of providing information to their international students.

International students usually have difficulties during adjustment process as they receive less social support because their families and friends tend to be far away. Only a small group of them can establish friendship with local students. This potential isolation could cause them to feel loneliness and homesickness (Andrade, 2006). This could be as a result of a lack of a sense of belonging and the "culture shock" they faced when arriving to the host country (Forbes-Mewett and Nyland, 2008). The lack of social connections is also linked to where international students get their information from. For example, (Chen, 2010) illustrated that intercultural adaptation is positively related to access of the host country's websites, and negatively related to access of the original country's websites. Moreover immigrant's intercultural adaptation is positively related to communication via the internet with local people but negatively related to communication with people in the original country. It may be because the more international students spent spend time with locals, the more likely their language would improve; and they would then also be more familiar with host country cultures, and learning/teaching methods. On the other hand, a lack of interaction and engagement with local cultures could not only isolate the students further, but also lead to them relying more on original country's websites – which may not always be relevant to living in the host country.

Different Levels of Skills: Another challenge could be a study-related. The key factor in study-related problems is that students may not clearly understand what is expected from them. These problems could be as a result of linguistic limitation and a change in education systems. For example, a shift from teacher-centred models of instruction in their home countries to self-directed style of teaching and learning in Australia (Zoe and DiMartino, 2000) represents a potential problem for students. Some researchers go so far as to indicate that some international students might have limited previous experience of independent learning, lack of conceptual awareness of library services and online information use and self-service procedures (Hughes, 2005, Baron and strout-Dapaz, 2001, Curry and Copeman, 2005).

International students have different educational background and variety level of IT skills and information literacy, because they come from different parts of the world. The level of IT skill and literacy of students varies and sometimes depends on the country of origin, for example students from South Korea have excellent IT skill but no knowledge of database searching or evaluation of web-based information and information literacy (Hughes, 2002)

In summary, international students challenges can be categorized in three main groups which have directly impact on their ISB. Figure 1 shows these factors.

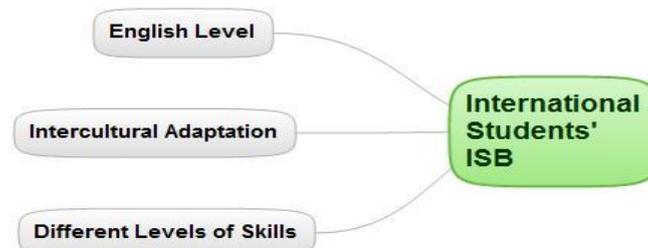


Figure 1: International students' challenges that affect their ISB

Therefore, the ISB of international students is important because they are in a new environment and they need information for all parts of their life. Also they might face more challenges than other student in the host country.

So, this paper asks the questions of: "**what factors impact on international students' information seeking behaviour (ISB)?**" For this purpose, we need to know factors influencing these challenges (making the challenges worse or easier for international student) which are affecting their ISB indirectly.

In the previous section, we identified the challenges which may have a direct impact on the ISB. However, there are other factors that might have an indirect impact on ISB through their influence on the challenges already described in the previous section.

Research Methodology

This paper aimed to answer the research question by proposing a conceptual model, based on an extensive critical literature review. According to Moody (2005), this approach synthesises existing research findings comprehensively into a unified conceptual model quality framework. While no primary data has been collected, this paper brings together literature from a number of different areas to explain the phenomenon. To satisfy the criteria of the quality framework based on (Moody, 2005), a single and concise sentence will be used for each characteristics and sub-characteristic in all explanation of model, figures and conceptual model to ensure its consistency. This model will be established based on analytical hierarchy process and will have detailed explanation for each link and connections.

What Factors impact on International Students' ISB?

In this section other factors affecting the ISB of international students will be discussed.

1. Demographic Characteristics

Based on the literature, some demographic characteristics of international students may influence ISB. There is no strong proof in the literature to show that some of these factors affect ISB directly. However, it is argued by some authors that these factors could increase the level of socio-cultural/psychological adjustment, students' library ability or information literacy and affect ISB indirectly.

Age: (Cemalcilar, Falbo and Stapleton, 2005) claimed that the younger students, the more likely they are to have intercultural adaptation. This was based on the idea that younger students might be able to use local internet sources more readily and therefore, have access to local knowledge more quickly than their older counterparts. This is of course, dependent on the use of local internet sources, and not necessarily age related in all instances.

Gender: Some studies show female immigrants have higher social-cultural, and psychological adaptation scores than male immigrants (Chen, 2010). However others show that women have lower competency in using computerised library resources and technologies. As most database searching requires extensive computer use and familiarity, it could affect their ability on ISB (Zoe and DiMartino, 2000). Therefore in this area, males were more satisfied and confident and had fewer difficulties than females (Andrade, 2006, Hanassab and Tidwell, 2002).

Nationality: (Cemalcilar et al., 2005) showed there is no systematic differences in level of adjustment of students from different nationalities. However other studies (Hanassab and Tidwell, 2002, Hanassab, 2006) showed that African, Asian, and South East Asian students have the greatest adjustment difficulties among all the regions. As mentioned before, this difficulty could affect their ISB. On the other hand for example in USA context, Canadians and West Europeans are more socially involved with the U.S. nationals and report fewer adjustment problems (Hanassab and Tidwell, 2002). It could be because of the cultural, language and education system similarities of these countries.

Income/Financial Problem: (Reynolds and Constantine, 2007:344) argued that "the greater degrees of acculturative stress experienced by international students were predictive of lower career aspirations". Chen (2010) indicated that wealthier immigrants were more adaptive to the host country. It may be because they can visit host country more and had more opportunities to participate to more ceremonies of the host country which makes their social adjustment easier.

Degree of Study: "undergraduate international students reported more problems and higher needs for services than did the graduate international students" (Hanassab and Tidwell, 2002:317) . However, this is contradictory to the age argument stated that younger students have better chance for intercultural adaptation. (This further challenges the idea that age may be a factor affective ISB.) It can also be argued that although postgraduate students are usually older than undergraduate students, they may have higher level of library skills information literacy and may be more familiar with online recourses and search engine which have been used during undergraduate degree.

Field of study: (Hanassab and Tidwell, 2002) illustrated that science-related fields have the most difficulties and the highest need for services. However, because it has not been considered in other studies, it does not look like a primary factor.

Having family in the host country: (Cemalcilar et al., 2005) showed that in the US context, students who reported having family members in the US had higher socio-cultural adaptation.

In summary we can conclude that students who have more success in adapting to host cultures, have higher level of information literacy, IT skills, and better English language are also more likely to have more effective ISBs. Therefore, any factors that increase adaptation and integration, information literacy are more likely to improve the chances of successful ISB indirectly.

The important point about Demographic factors is: while the demographic factors are interesting, it needs further research to further confirm. Some of the findings analysed here contradict to each other (eg. age and degree of study). Despite of this limitation, they have been included in this paper in order to provide a more holistic view of the phenomenon.

2. Length of Staying In the Host Country

Many studies have discussed the impact of time spent in the host country on international students adjustment. For example, Cemalcilar et al. (2005) claimed that the time spent in the host country is associated with the acculturation experience. Another study shows that the longer an immigrant resides in the host country, the more likely it is that they would surf the host country's websites, and the less likely they would be to surf the original country's websites (Chen, 2010). Overall "in all cases, adjustment was linear with problems decreasing from the first year to the final year" (Andrade, 2006:141). On the other hand the length of stay in the host country affects how often students use the library, their behaviour in asking reference questions and in the students level of information-seeking success (Liu and Redfern, 1997). Another study compared first year and final year students and has claimed that generally final year students more likely to ask librarian for help, have higher level of access to electronic resources and have more developed information seeking and retrieval skills (Callinan, 2005).

In summary, the length of stay in the host country has three main results. First: It may cause some improvements in English language and communications with locals, face to face and via computer/Internet (to be discussed later). Second: As a result of the first point, international student's socio-cultural adjustment is developed over time. Third: they would more familiar with library facilities, education system, self study and searching in e-databases. All of these will impact on successful ISB of international students.

3. Using Host Country language on the Internet

(Chen, 2010) showed that longer an immigrant resides in the host country; the more likely it is that they would communicate with local people via the Internet. This article also argued that the longer students spend in host country, the more likely use official language of the host country on the Internet; also there is a positive relationship between intercultural adaptation and the use of language on the Internet. It is because the longer they stay in the host country; the more likely they become competent in the host country language and culture, so they can communicate with locals more and more.

4. Individual/Collaborative Information Seeking (CIS)

Another factor which might also affect ISB is whether students are working individually or in a group. It is hard to judge how successful Collaborative Information Seeking (CIS) is, because there are limited studies about it. However, Spence, Reddy and Hall (2005) claimed that CIS is more successful because it allows collaborating students to more quickly find more relevant information when compared to individuals. Also they believe its success is depends on how well the team of collaborators can work together. By working in a group, students have more contact with others, can learn from each other and improve self confidence and even improve their social connectedness. Therefore, international students who engage in collaborative information seeking may able to improve their language, intercultural adaptation and level of skills.

5. Approaches to Searching for Information and Learning

This factor is about the way users search for information. It refers to whether their searching process is professional and they use specialist resource for a specific topic or use low reliability resources and their search technique is limited to just "good enough" information. According to this definition this factor is not only applicable to international students.

While the rapid expansion of the Internet and online publishing has dramatically improved students' capacity to find and access resources from both academic and non-academic sources, they can also express frustration and impatience in their own searching abilities and skills (Kennedy and Judd, 2011). For example, student's use of

generalist online tools (low reliability informational sources) like Google and Wikipedia, have increased markedly. However, students' use of specialist online tools including the university library, Google Scholar and high reliability resources included peer-reviewed journal articles, has been consistently low (Kennedy and Judd, 2011). These all show the behaviour of students was best characterised by expediency. Also it shows the difficulties of students in conducting effective searches and determining the relevance, accuracy, and authority of sources, despite their technological abilities. So authors of this article used "*Satisficing*" term for ISB because students use "near enough is good enough approach" (Kennedy and Judd, 2011:127). It means they approach is acceptable but not best. The term of *Satisficing* (a combination of words "satisfying + sufficing") "[is a] form of behaviour that enables users to deal with prohibitively large amounts of information" (Nicholas, Huntington, Jamali, Rowlands and Fieldhouse, 2009:109).

Moreover, there is a clear relation between students' satisficing ISB and established educational research on students' approaches to learning. Based on Marton and Saljo (1976a, 1976b) cited in (Kennedy and Judd, 2011), there are two important student approaches in learning: *Deep*: trying to comprehend the meaning behind learning material and *Surface*: to focus on simply reproducing what was contained within the learning material with little concern for understanding the overall meaning. The *Surface* learning approach leads Satisficing information seeking approach in lots of students. The learning approach is also affected by personality and EI of user (next section). This approach of learning and searching for information affect the accuracy and length of ISB for relevant information.

6. Personality and Emotional Intelligence

This section highlights the psychological aspects of users. There are not many studies about its impact on ISB. However, information seeking is a dynamic and changeable process and based on (Kuhlthau, 1991) it has been affected by user feelings and emotions.

Personality has been defined as a "pattern of characteristic thoughts, feelings, and behaviours that distinguishes one person from another" (Phares, 1991, p. 4) as cited in (Heinström, 2005). Also Heinström (2005: 243) confirmed that "personality traits and study approaches [previous section] interacted in their influence on general information-seeking patterns". So based on this definition of personality in the literature, we can conclude its possible impact on ISB. Also it could not place in Demographic category, because Demographics are about statistical characteristics, while personality is about feelings and thoughts.

Mills (2006) argued that EI comes from the affective realm but with more emphasis on an interactive interpersonal level. Also he claimed that "in library and information management a greater understanding of the affective realm and concepts such as personal constructs, memory representations and emotional intelligence would seem to have relevance" (2006:590). He concluded "key tenets of emotional intelligence as useful assistance strategies in user-librarian interaction"(2006:595). So based on this arguments, EI might also have an impact on ISB.

Also according to Goleman (1999), EI is a capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and our relationships and has two domains: Personal competence and Social competence. Therefore, based on this definition, a person with higher EI may have better ability to contact with other persons. In the context of international student, this capability may help them for better connection with others and easier socio-cultural and psychological adjustment which has an impact on ISB.

7. External/Environmental Factors

There are environmental factors also affecting ISB of all students, not only international students. For example aspects of environment that users work there like climate of environment, socio-cultural environment and physical environment (Wilson, 1981). In the context of students, the environment they working there is their universities or home. In that context, the university climate, access to lecturers and support services professionals, proper learning environments for collaboration among students, library facilities and accessing to different sort of source of information like online data bases, books, journals are crucial in information seeking in their home and university. Having a supportive environment that highlights the importance of finding relevant and useful information can have a direct impact on the ISB of international students.

Time constraint is another important factor affect information seeking (Wilson, 1997). Students have limited time for doing assignments and they have to find the most relevant information in the limited time. It may affect their approach for obtaining information. As explained in the section 5, it may cause students to choose Surface or Deep learning approach (based on how much time they have) and Satisficing information seeking approach to hand in assignments on time.

Proposing the Conceptual Model

All factors and challenges may affect ISB of international students categorized in three levels of contextual interactions in this model (Internal Context, External Context, and Cognitive Approach) which are inspired by the Foster's ISB model (2005), so we need to analysis each one in detail and link them to international students' context.

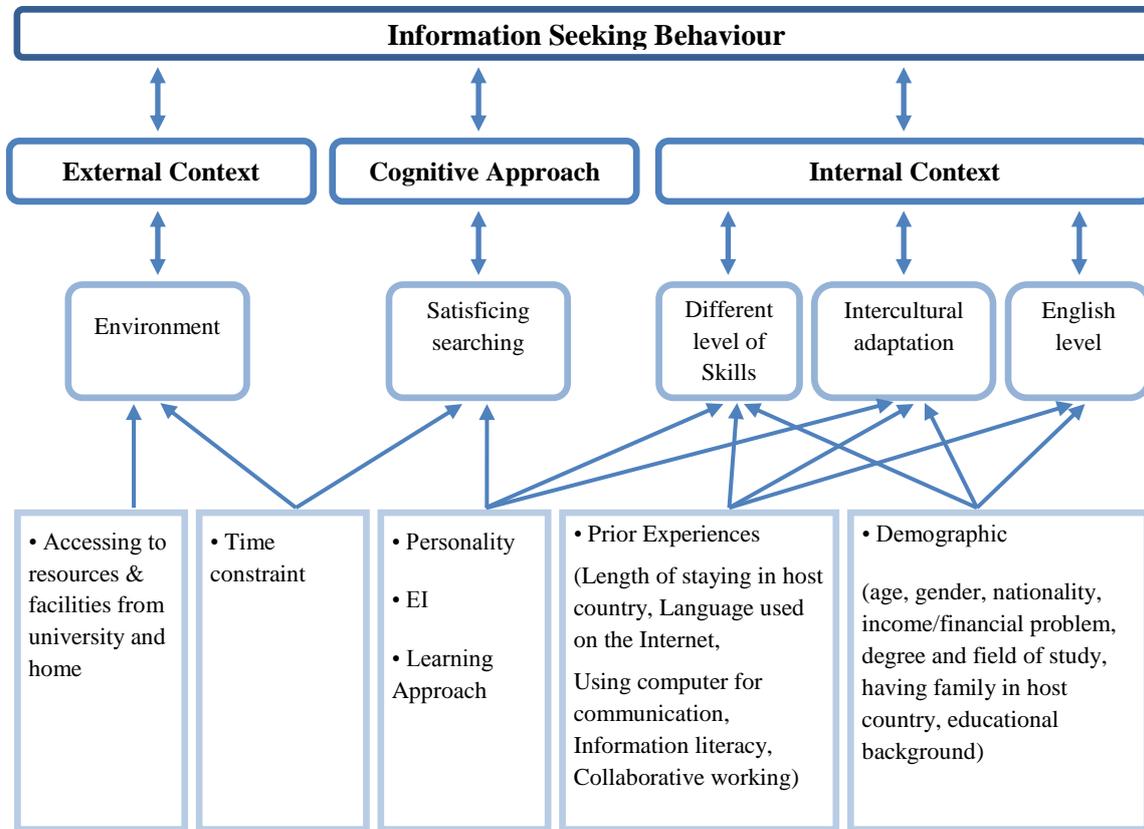


Figure 2: **Conceptual Model:** Factors affecting information seeking behaviour of international students

External Context: these factors in the context of international students could refer to the environment of their educational institution, their accommodation arrangement, and any time constraint related to their course of study. The climate of environment, accessing to some facilities like library and online/offline resources from home and university, accessing to support professionals and lecturers to answer their questions and proper leaning environments and time constraint for assignments could be connected to External factors.

Internal Context: Three major (English Level, Intercultural Adaptation and Different Level of Skills) factors are clustered under **Internal Context** because they refer to the international student him/herself. These factors indicate that the student's level of English, level of adaptation to host country cultures and higher level of ISB skills will mean greater success in finding the most relevant information as they navigate through their daily live in their host country. In addition, the three major factors are also influenced by the international students' demographic factors, their prior experiences in a range of areas and their personality, emotional intelligence and learning approach.

Cognitive Approach could be described as aspects of the *mode of thinking* observed in the participants, a willingness to identify and use information. So Satisficing searching is connected to **Cognitive Approach** as it is influenced by *learning approach* of international students. Moreover, *mental agility* could be relevant to personality and EI, so they are also linked to Satisficing searching. Time constraint may affect the way students choose for searching, so it is also linked to Satisficing searching.

The model shows the various factors that can influence international students' ISB. As indicated previously, understanding ISB can help students and institutions improve their ISB for the benefit of the students over time.

Discussion: The Significance of the Proposed Model

Theoretically, this model highlights the factors that impact on international students' ISB. It brings international students studies and ISB models together. Unlike other research on ISB with more focus on different stages that people go through generally in seeking information and little attention to the user in some cases, this paper's focus is more on the specific group of information seekers (international students) and their needs.

Practically, the model highlights the inter-links between various factors that impact on the ISB of international students, and has implications for educational institutions which are looking to improve communication with their international students, and to help their international student develop and improve their own ISB. For the international students, this model indicates challenges that may impede their own ability to navigate a new and complex educational and living environment, to improve their ability to adapt to their new environment. More specifically, the following are areas where there might be practical implications from the model:

- Educational and living environments that are supportive and encourage students to interact with diverse sources of information are important for the development of international students' ISB. This also means that institutions need to have reliable and strong sources of information that international students can use and trust. In addition, international students need time to navigate these sources of information, as time constraints and pressure does not help to develop their skills.
- There are some areas where educational institutions have a direct impact on in assisting to develop and improve international students' ISB. These would include improving learning approaches, paying more attention to students' needs in the early stages of students' sojourn, encouraging the use of local web sources, improving their information literacy, encouraging their collaborative work ethic, alleviating financial pressures, and assisting with intercultural adaptation. Although many institutions are already focused on improving learning approaches and have orientation program, this model indicates that more could be done over a longer period of time.
- This model also can change the current practice of 'one size fits all' student portals that cater to the needs of all international students. Based on the model's finding, such solutions may not be able to meet all international students' needs. Due to the fact that international students come from different parts of the world, they have different educational, cultural background, level of English language, information literacy, IT skills and certainly different personality, learning approach and EI which all affect their ISB. Therefore, it is impossible that one source to have this ability to cater to all students' need. Moreover, it is very unlikely that students with different ISB profiles would visit the one website for finding their answers. Also, these differences may be due to their own behaviour of limiting their search only to websites in their home country and language. There may also be some technical boundaries like websites and platforms that are banned in various countries of origin.

It could be argued that the same problem exists with orientation program in the universities. Although orientation programs have well documented usefulness, having the same program for all students with different needs may not always meet all the students' needs. Moreover, students usually suffer from information overload and feelings of confusion after this short program. Therefore, based on this model, universities and education providers may need to run orientation programs that appeal to the international students' culture, language level, and their information needs. One practical solution for institutions could be to encourage student-based online social networks where they can interact with other students from same country in plain English. These virtual environments should use plain English language to encourage new international students to participate to discussions, increase their self-confidence and help them to improve their language skill.

- When designing websites or informal social platforms to engage with international students, the practice of consulting with user groups should be continually encouraged, recognising the diversity of international student groups. Consultations need to factor in feedback on their language, culture and religion and using plain English language.

In conclusion, this is a conceptual model that provides some initial insights into the factors that impact on international students ISB. However, it is limited because as a conceptual model, it was built through literature review and was not supported by empirical evidence. Therefore, future research might include an examination of the actual behaviours and information sources of international students. The ISB of international students is an important area for research to understand the ways in which international students seek out information to help them in their decision making, and navigation of academic work and everyday living.

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