Information Seeking Abroad

An Everyday-Life Study of International Students

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Abstract

Purpose – We investigate how four international students at a Danish university cope with their study-related and everyday information needs, behaviorally as well as affectively, and how their information seeking blends with their cross-cultural adaptation.

Design/methodology – Each of the four participants contributed ten diaries and took part in three interviews during the first semester of their stay.

Findings – International students' information needs and seeking behavior are shaped by their host university but also by cross-cultural, personal, and situational issues. While the cross-cultural issues set international students apart from domestic students, the personal and situational issues create individual differences that call for more individually tailored support. The studied international students lacked information about both study-related and everyday issues. These two types of issues were intertwined and experienced as equally stressful. However, study-related information needs were more important, whereas everyday information needs were more difficult to resolve. In addition, participants tended to feel on their own when it came to finding needed information, but studying abroad also had elements of personal growth in meeting life's challenges.

Research limitations/implications – More participants are needed to investigate how international students' information seeking evolves over time.

Originality/value – This study contributes detailed information about international students' study-related and everyday information seeking during their first semester abroad. The study has implications for everyday-life studies of international students' information behavior and the international classroom in general.

Keywords: information seeking, information behavior, everyday life information seeking, cross-cultural adaptation, international students

1   Introduction

In 2016 more than 5.1 million university students were studying abroad (OECD, 2018). These international students face a foreign educational system in terms of curriculum, teaching approach and norms for student behavior (e.g., Hughes, 2013; Liao et al., 2007; Mehra and Bilal, 2007; Song, 2005). In addition, their uprooting from their home country necessitates cross-cultural adaptation to cope with the transition to the host country (e.g., Jeong, 2004; Khawaja and Stallman, 2011; McLachlan and Justice, 2009; Shafaei and Razak, 2016). As a result, international students contend with a variety of study-related and everyday-life information needs and they experience uncertainty about where to

turn for answers. To support the international classroom host universities must appreciate that the international student's experience and performance are influenced by factors that reach well beyond the university (Sin et al., 2011).

This study investigates the information seeking behavior of international students at a Danish university. Though research on international students has increased over the last 25 years – in parallel with the increase in international students worldwide – studies have primarily targeted international students in the US and other English-speaking countries (Click et al., 2017). In Denmark, for example, the teaching language in the international classroom is English but the default language outside the classroom is Danish. Furthermore, the research topics of previous studies mostly derive from academic libraries and their interest in providing better service to international students. In this study we are interested in international students' *lived experience* and consequently take the approach of everyday-life information seeking (McKenzie, 2003; Savolainen, 1995). Using Savolainen's (1995) concepts, international students lack knowledge of the order of things in the host country and, therefore, experience uncertainty and complications with how to master their lives, study-wise and otherwise. Integrating the everyday with other life situations, such as studies, is important in information-seeking research (Given, 2002) and intrinsic to everyday-life information seeking. In this study we ask:

How do international students cope with their study-related and everyday information needs, behaviorally as well as affectively, and how does their information seeking blend with their cross-cultural adaptation?

To collect rich data about this topic, the study takes a qualitative research approach, including diaries and interviews. While most previous studies of international students are one-shot surveys (Click et al., 2017), we follow the participants during the first four months of their stay in Denmark. In the following, we review related work (Section 2), describe the diary and interview method (Section 3), present our results about international students' behavior and experiences in coping with their information needs (Section 4), and finally discuss the implications of these results (Section 5).

2   Related work

Our review of related work is summarized in Figure 1, which shows how the international student repeatedly experiences gaps that necessitate information seeking to bring things back in order. In the following, we first describe research on international students, which accounts for the gaps they face and the feelings they experience in bridging them. Then, we describe research on everyday-life information seeking, which accounts for the bridging process.
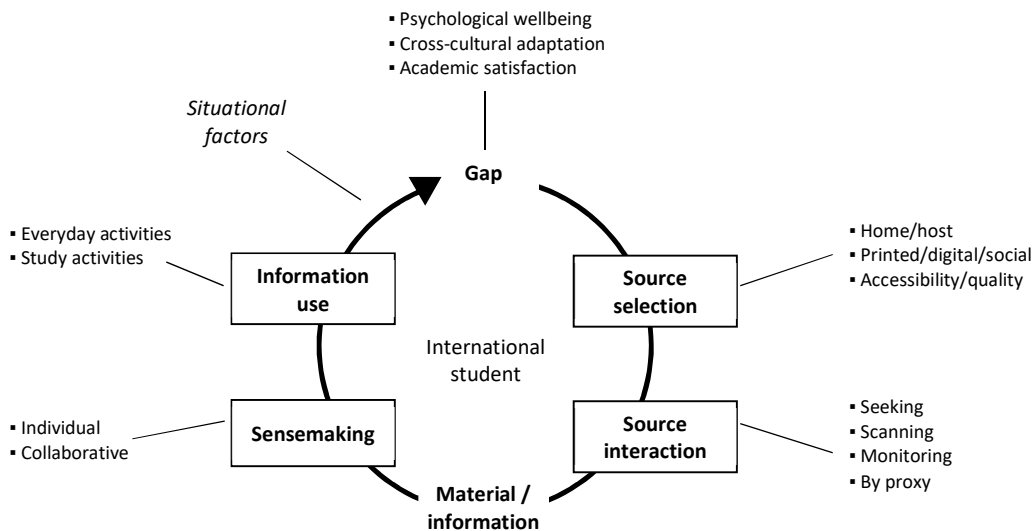
Figure 1. The international student's everyday-life information seeking

2.1 International students

International students' diverse heritage and perspectives enrich the host country in general (Smith and Khawaja, 2011). More specifically, their presence increases the cultural awareness among the domestic students and constitutes a substantial source of income for the host universities (Smith and Khawaja, 2011). Because many international students need a job to sustain themselves, their stay abroad involves being an international student as well as a migrant worker (King and Raghuram, 2013). While their status as students is positively valued through its association with getting an education and a lifetime experience, their status as workers is typically associated with low-skilled, low-paid jobs (Wilken and Dahlberg, 2017). Low-skilled jobs provide few possibilities for study-relevant experiences and low-paid jobs may necessitate long hours, which reduce the time available for studying.

As a result of both study-related and everyday issues in their encounter with the host country international students commonly experience acculturative stress (Click et al., 2017). Acculturation is "the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members" (Berry, 2005, p. 698). While this definition is symmetrical with respect to the cultures involved, research on international students indicates that most of the change effort falls on their shoulders and consists of adapting to the host culture. It is, for example, common for international students to experience language barriers, unmet academic expectations, and difficulties in socializing with domestic students and, therefore, to find cross-cultural adaptation challenging (Jeong, 2004; McLachlan and Justice, 2009; Smith and Khawaja, 2011; Zhang and Goodson, 2011). Likewise, Sin and Kim (2018) find that 'international status' generates language and cultural barriers compared to 'domestic status' as well as higher levels of uncertainty about how to navigate the information landscape and cope with information seeking.

Many international students experience a change overload that makes them stressed, anxious, and depressed (Khawaja and Stallman, 2011; McLachlan and Justice, 2009; Zhang and Goodson, 2011). Part of the reason for the change overload is that the changes initially present themselves as gaps. To bridge the gaps the international students must stomach the unsettling sense of disorder and engage in the cross-cultural adaptation necessary to transform the gaps into accomplishable changes. Through interactions with their environment international students learn and acquire host-culture skills, which

are necessary to function in their new environment (McLachlan and Justice, 2009). The importance of cross-cultural adaptation has been documented extensively in studies of sojourners and migrants but also among international students (Kim, 2001). According to Shafaei and Razak (2016), successful cross-cultural adaptation is a prerequisite for international students' psychological wellbeing and academic satisfaction. Inspired by their work, Figure 1 conceptualizes international students' information seeking as triggered by – and in turn contributing to – their psychological wellbeing, cross-cultural adaptation, and academic satisfaction. In addition, seeking and acquiring local information is essential for international students' general adjustment to a life in the host environment (Mehra and Bilal, 2007).

For immigrants, Shoham and Strauss (2008) find that the primary information needs concern banking, driving, health, housing, language, legal issues, schooling, and work. Similar information needs recur in studies of international students (Oh and Butler, 2019; Sin et al., 2011; Yoon and Chung, 2017), thereby emphasizing that a sizable part of their information needs are about everyday issues.

International students experience study-related gaps in addition to the academic challenges that international students have in common with domestic students. For example, Khawaja and Stallman (2011) find that international students from Asia are unfamiliar with written assignments and group work, which are common in European and North American universities. They are also unaccustomed to the expectations of critical thinking (Hughes, 2013) and to the informal manner in which domestic students interact with the teaching staff (Smith and Khawaja, 2011). In addition they perceive the library as a place to study rather than a place for accessing resources (Song, 2005) and, for example, abstain from asking librarians for help (Catalano, 2013). Furthermore, McLachlan and Justice (2009) note that in some international students' home cultures academic underachievement and failure bring shame to both student and family, thereby creating an extreme pressure to perform well and a fertile breeding ground for anxiety.

Temporal issues such as length of stay also influence cultural adaptation. For example, long-term immigrants are more likely to engage in cultural adaptation than temporary sojourners, such as international students (Kim, 2001). In addition, the initial phase of the stay abroad constitutes a particular source of uncertainty and stress (Oh and Butler, 2016, 2019; Ward et al., 1998; Yoon and Chung, 2017). In a longitudinal study of international students' information seeking during the initial adjustment process, Oh et al. (2014) found that 'survival' issues such as health and housing are more important than recreational issues. In a follow-up study, Oh and Butler (2016) found that recreational issues had become more important after the first semester abroad; survival issues remained important.

2.2   Everyday-life information seeking

People in familiar surroundings have a way of life shaped by numerous habits, norms, and routines. Collectively, these habits, norms, and routines establish a taken-for-granted order of things that provides a stable and reliable backdrop for day-to-day activities (Savolainen, 1995). At the same time, people make adjustments to this order of things to keep it meaningful in the face of evolutions in their way of life. Information seeking is a key component in restoring meaningfulness when the order of things breaks down; such restoration is important to people's functioning and wellbeing because they experience the disorder as a reduction in their ability to master their lives (Savolainen, 1995).

By uprooting from their home country, international students replace their familiar surroundings with the way of life in the host country, thereby subjecting themselves to an unusually large and abrupt reduction in mastery of life. Yoon and Chung (2017) capture this temporary state of lostness in their finding that the interviewed international students "did not know where to begin in order to find the information they needed, nor were they certain of exactly what information they needed to know" (p. 123). Similar findings of temporary lostness have been reported in studies of, for example, refugees

and conceptualized as a need for them to adapt their information-literacy practices (Hicks and Lloyd, 2016; Lloyd et al., 2013).

Savolainen (1995) contends that information seeking is intrinsic to people's pragmatic problem solving in everyday-life situations. Pragmatic problem solving involves the acquisition, evaluation, and use of various informational elements in situations that are problematic to handle. In that way, Savolainen's (1995) understanding of information seeking is broader than other models of information seeking behavior (e.g., Wilson, 1999). While taking the everyday-life information seeking approach, we acknowledge that international students' information seeking can also be studied under other rubrics such as information literacy, thereby stressing the learning aspects (e.g., Badke, 2002).

In her model of everyday-life information seeking McKenzie (2003) distinguishes between the phases of connecting and interacting with a source. This distinction has informed the right-hand side of Figure 1, though we recognize that McKenzie's model is derived from interviews with pregnant women rather than international students. With respect to *source selection* (i.e., connecting) a factor specific to international students is the choice between home-country and host-country sources. Saw et al. (2013) find that Chinese international students at a US university more often ask for help about their studies on Renren (a Chinese social networking site) than on Facebook, thereby choosing against host-country sources even for study-related information needs. While teenagers (Agosto and Hughes-Hassell, 2005) and to some extent adults (Hertzum, 2014) tend to prefer people as information sources, international students rely to a larger extent on online sources (Catalano, 2013; Sin et al., 2011), possibly due to barriers in language speaking. In addition, convenience is critical to the selection of sources for both study-related and everyday information needs (Connaway et al., 2011). However, it is reassuring that the quality-related factors of relevance, accuracy, and reliability exert as strong an influence on students' source selections as the convenience-related factors of accessibility and ease of use (Liao et al., 2007). In particular, the quality assessment of information sources has been found to cause international students uncertainty for both study-related (Click, 2017) and everyday (Sin, 2015) information needs.

With respect to *source interaction* McKenzie (2003) distinguishes between active seeking, active scanning, non-directed monitoring, and searching by proxy. Studies of international students' information seeking emphasize active seeking and scanning over the serendipitous encounters that may arise from non-directed monitoring. For example, Khawaja and Stallman (2011) quote an international student for saying that you "need to be active rather than waiting for help from other people" (p. 209). That said, tacit knowledge acquired from participation and observation, also contribute to international students' acculturation process (Berry, 2005), just as it has been found to be an important source of information for refugees (Lloyd et al., 2013). Searching by proxy illustrates the multiple ways in which information seeking can be a social process. Whereas some studies find that international students consult each other (Smith and Khawaja, 2011) or their professors (McLachlan and Justice, 2009) for information, searching by proxy consists of having someone else search on your behalf. Academic librarians are a frequently available proxy for study-related information needs, but often unused by international students (Catalano, 2013). Friends and family may also act as proxies (McKenzie, 2003).

The left-hand side of Figure 1 is about making sense and use of the retrieved information to restore order. In a study of family historians Yakel (2004) shows how *sensemaking* is intertwined with source selections and source interactions and that it can, ultimately, be about finding coherence in one's own life. Studying abroad has a similar element of discovering oneself (Karkouti, 2014), though the means are very different from those of studying one's genealogy. Research on international students predominantly depicts them as individuals and, therefore, also sees their sensemaking as an individual activity. This depiction is reinforced by the finding that many international students struggle with loneliness and social isolation (Erichsen and Boliger, 2011; Sawir et al., 2008). However, sensemaking

can also be a process of collaboratively grounding retrieved information (Hertzum, 2008; Hyldegård, 2009). Berry's (2005) definition of acculturation (see above) explicitly mentions cultural groups as well as their individual members and, thereby, suggests the importance of considering both collaborative and individual sensemaking. Finally, *information use* may contribute to the international students' resolution of study-related and everyday needs, thereby closing information gaps and contributing to psychological wellbeing, academic satisfaction, and cultural adaptation.

3   Method

To collect rich empirical data about international students' behavior and experiences in coping with their information needs, we adopted an exploratory and longitudinal approach consisting of diaries and interviews. Each participant contributed ten diaries and took part in three interviews.

3.1   Participants

Four international students participated in the study, see Table 1. They were between 24 and 32 years old and all of them had a bachelor degree from their home country. All four participants were in Denmark to obtain their master degree from University of Copenhagen; they participated in the present study during the first of the four semesters of their master degree in information science. For two of the participants the stay in Denmark was their first experience as international students. The two other participants were studying abroad for the second time. Two of the participants were in Denmark alone (Musoke and Daria, see Table 1), the two other participant were in Denmark with their girlfriend (Helmut) and their spouse and children (Olafur). The participants rated their English skills as good, their Danish skills as poor, and their self-efficacy as high (Table 1). Self-efficacy was measured using the ten-item version of the General Self-Efficacy Scale (Schwarzer et al., 1997). Each item was rated on a seven-point scale and the item ratings were summed, thereby resulting in a score between 10 (minimum self-efficacy) and 70 (maximum self-efficacy).

Table 1. Participant profiles

Pseudonym	Age	Gender	Home region	1st time abroad	English skills [a]	Danish skills [a]	Self-efficacy [b]
Musoke	24	Male	Africa	No	7	2	57
Daria	25	Female	Asia	Yes	5	1	50
Helmut	25	Male	Europe	No	6	2	68
Olafur	32	Male	Europe	Yes	5	3	53

[a] Self-rated on a 7-point scale (1 – None, 7 – Expert level)
[b] Self-rated on ten 7-point scales (range of sum score: 10 – 70)

3.2   Procedure

We initially contacted the participants prior to their arrival in Denmark and invited them to take part in the study. The invitation was mailed to all international students enrolled to start their studies at our department that fall. In response to the invitation four students indicated that they were interested in taking part in the study. For these four participants the data collection started a week into the semester and consisted of:

- A group interview (September) for introducing the study and getting information about the participants' background and expectations. In preparation for this interview, the participants had

filled in a questionnaire about their background, preparations, and self-efficacy. At the end of the interview, they gave their written consent to take part in the study.

- A weekly diary (September to November) about the participants' information seeking. To make it feasible for the participants to complete the diary week after week, it had the form of a brief questionnaire. The diary was administered online for ten consecutive weeks. Each Friday participants received an email with a link to the diary form; no reminders were issued.

- An individual interview (November) about the participants' information seeking and how they coped with their information needs. These interviews were based on the diaries and unfolded as elaborations of their content, structured by an interview guide. The interviews lasted about 1.5 hours.

- A focus-group interview (December) to discuss issues from the diaries and previous interviews in a collaborative context. To cover more perspectives in the discussion the focus-group interview was attended by three international students from the faculty in addition to the study participants. It lasted 1.5 hours.

The diary consisted of nine questions about the past week in general and four questions about a concrete incident in which the participants had needed information. The questions were inspired by the conceptual model in Figure 1 and by a pilot study carried out in 2015 (Hyldegård and Hertzum, 2016). Five of the questions about the past week in general concerned the participants' experience of their information seeking (e.g., 'The past week has been stressful because I have lacked information') and four concerned the ways in which they had looked for information (e.g., 'I have looked for information by asking other people'). All nine questions about the past week in general were answered on rating scales. The first of the four questions about the concrete incident asked the participants to 'Describe a situation where you during the past week have needed information'. Participants were requested to provide 2-5 sentences of description. The three remaining questions asked the participants about the importance of the described incident, its difficulty, and the sources they had consulted in resolving it. The response options for the question about consulted sources were people in home country, people in Denmark, online sources, printed sources, and other.

The interviews were semi-structured and informed by the research activities preceding them. The individual interview inquired into the diary content about the past week in general as well as the reported incidents. For the past week in general the interview guide contained questions about how information needs had extended and evolved over time, whether they had been resolved, how many sources the participants needed to consult to resolve information needs, whether and how contacts in the home country were used for acquiring information, and what experiences and barriers were associated with studying abroad. For the incidents, we asked the participants to elaborate why these incidents were outstanding, in what ways they were stressful, how they affected the participants' wellbeing, and how the participants resolved the incidents or managed to proceed without resolving them. To qualify the elaboration of the incidents, the participants received a list with their reported incidents at the beginning of the interview. The focus-group interview served to discuss and further explore four themes from the diaries and individual interviews: (a) the interrelations of information needs, information sources, and information-seeking strategies, (b) the social identity of being an international student, (c) experiences 'so far', and (d) expectations for the remainder of the study abroad.

All interviews were audio-recorded. The participants received a gift card for two cinema tickets as a token of our appreciation for their willingness to share their experiences with us.

The diary data were analyzed with non-parametric statistical tests because the participants indicated their responses on rating scales. As a precursor to the statistical analysis, we coded each of the reported incidents with respect to whether it concerned a study-related or everyday issue. This coding enabled tests of differences between study-related and everyday incidents. To compare the response distributions of pairs of variables we used χ^2 tests (nominal variables) or Mann-Whitney tests (ordinal variables); for analyses involving more than two variables we used Kruskal-Wallis tests (unrelated samples) or Friedman tests (related samples) followed by pairwise comparisons. Correlations between variables were tested with Spearman rank-order correlations (r_s). Because groups of more than two diary questions co-varied, the Spearman correlations were supplemented with partial Spearman correlations. Partial correlations measure the association between two variables whilst controlling for the effect of a third variable, thereby partialing out the third variable. We used the partial correlations to analyze the influence of lacking information about study-related and everyday issues, respectively, on the participants' experience of how stressful it was to lack information.

The group interview, individual interviews, and focus-group interview were analyzed by first listening through the audio recordings and transcribing the content about how the participants coped with their information needs and how their information seeking blended with their cross-cultural adaptation. Then the transcripts were read several times to bring out intra-interview topics as well as cross-cutting themes. We used the conceptual model in Figure 1 to frame the reading and alternated between this analysis of the interview data and the statistical analysis of the diary data. The analysis of the interview data centered on gaps in the participants' information needs and on their strategies for coping with these information needs. To understand the impact and importance of the information needs and coping strategies we linked them to participants' statements about their psychological wellbeing, cultural adaptation, and academic satisfaction.

4   Results

In this section, we first analyze the participants' information seeking in general. This analysis is based on the 39 (out of 40) diaries that contained complete responses to the nine questions about the past week in general. Then, we analyze the concrete incidents reported by the participants. This analysis is based on the interviews and the 36 diaries with complete responses to the four incident questions. Finally, we analyze the interrelations between study-related and everyday issues. This analysis is based on the interviews.

4.1   The participants' information seeking in general

In the course of the ten-week diary period the participants needed, sought, and used information about all sorts of issues. Figure 2 shows the extent to which the participants experienced the weeks as stressful because they had lacked information. The particulars of the individual week gave rise to substantial week-to-week variation in stressfulness. Similarly, the particulars of the participants and their circumstances gave rise to substantial participant-to-participant variation. With a median response of 3, the participants tended to slightly disagree that the week had been stressful due to a lack of information. A quadratic regression of the median weekly stressfulness explained 73% of the variation in the data. That is, the overall trend in the evolution of the stressfulness was that it increased gradually through Weeks 36 to 40 and then decreased gradually through Weeks 41 to 45.
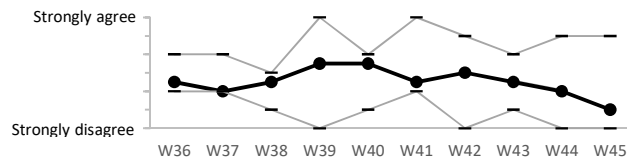
Figure 2. Week-by-week responses to the diary question "The past week has been stressful because I have lacked information", *N* = 39 responses. The black curve shows the median response for each week. The grey curves visualize the participant-to-participant variation by showing the minimum and maximum response.

Table 2 shows the correlations among the diary questions about how the participants experienced their information seeking. Stressfulness (Q1) correlated significantly with the question "I have known how to go about finding the information I needed" (Q2) in that not knowing how to find needed information was experienced as more stressful. However, the weak strength of this correlation indicated that factors beyond knowing how to find needed information entered into determining how stressful it was for the participants to lack information. Somewhat surprisingly, "I have been on my own when it came to finding information" (Q3) did not correlate with stressfulness and, thus, appeared to be a factor independent of stressfulness.

Lacking information about study-related issues (Q4) and everyday issues (Q5) correlated significantly with stressfulness: The more the participants had lacked information about these issues, the more stressful the week had been (Table 2). Because study-related issues and everyday issues did not correlate with each other they appear to be separate factors, both of which influencing stressfulness. The influence of study-related issues and everyday issues on stressfulness was affected by the extent to which the participants knew how to find needed information (Q2) as Q2 co-varied with stressfulness and everyday issues, but not with study-related issues. These co-variations motivated the use of partial correlations. A partial correlation analysis showed that when the influence of Q2 was controlled for then stressfulness correlated with study-related issues (partial r_s = .42, *N* = 39, *p* < .01) and everyday issues (partial r_s = .45, *N* = 39, *p* < .01) to equal extents. That is, study-related issues and everyday issues exerted a similarly strong, moderate influence on stressfulness.

Table 2. Correlations among the diary questions about the participants' experience of their information seeking, *N* = 39 responses.

Question	Q1	Q2	Q3	Q4	Q5
Q1: The past week has been stressful because I have lacked information [a]	-	-.32 *	-.04	.41 **	.53 ***
Q2: I have known how to go about finding the information I needed [a]	-.32 *	-	-.06	-.03	-.47 **
Q3: I have been on my own when it came to finding information [a]	-.04	-.06	-	-.31	.39 *
Q4: I have lacked information about study-related issues [a]	.41 **	-.03	-.31	-	-.16
Q5: I have lacked information about everyday (i.e., non-study) issues [a]	.53 ***	-.47 **	.39 *	-.16	-

[a] 1: strongly disagree – 7: strongly agree, * *p* < .05, ** *p* < .01, *** *p* < .001 (Spearman rho)

Table 3 shows the median responses for the diary questions about how the participants experienced information seeking and how they looked for information. With respect to the participants' experience, the central tendency across the ten diary weeks was that the participants only lacked information to the extent of making their life as international students modestly stressful (Q1). The participants agreed that they knew how to go about finding needed information (Q2) and slightly disagreed that they lacked information about study-related and everyday issues (Q4, Q5). However, they also tended to agree that they were on their own when it came to finding information (Q3), thereby suggesting that in spite of generally coping well with their situation they were somewhat vulnerable.

With respect to how the participants looked for information, the diary probed their use of four means of obtaining information: people (Q6), written material (Q7), observation (Q8), and chance (Q9). These four means of obtaining information were not used with equal frequency (Friedman test, $\chi^2(3, N = 39)$ = 12.94, $p < .01$). Pairwise comparisons showed that across the ten diary weeks people and written material were used more often than observation of how others did (both ps < .05). Notably, the pairwise comparisons could not reject the hypothesis that the participants stumbled upon relevant information by chance as often as they obtained it actively from people and written material (both ps > .09).

Table 3. Median responses for the diary questions about the past week in general, N = 39 responses.

Question	Grand median	Participant median			
		Musoke	Daria	Helmut	Olafur
Q1: The past week has been stressful because I have lacked information [a]	3	2	5	3	4
Q2: I have known how to go about finding the information I needed [a]	6 ***	7	4.5	7	5
Q3: I have been on my own when it came to finding information [a]	5 ***	7	6	1	5
Q4: I have lacked information about study-related issues [a]	3 *	2	5	7	3
Q5: I have lacked information about everyday (i.e., non-study) issues [a]	3 ***	2	4	1	4
Q6: I have looked for information by asking other people [b]	4 **	2.5	7	4	3
Q7: I have looked for information by consulting written material (online as well as printed) [b]	5	4	5.5	1.5	5
Q8: I have looked for information by observing how others do [b]	3 ***	1	5	1.5	3
Q9: I have stumbled upon relevant information without looking for it [b]	3 ***	1	6	1	5

[a] 1: strongly disagree – 7: strongly agree, [b] 1: very rarely – 7: very frequently, * $p < .05$, ** $p < .01$, *** $p < .001$ (Kruskal-Wallis test)

In addition to the median across the four participants, Table 3 also gives the median for each participant and the result of tests for individual differences among the participants. There were significant individual differences for seven of the nine questions about the past week in general. For example, for Q3 the participant medians ranged from strongly agree (Musoke) to strongly disagree (Helmut). These participant-to-participant differences warrant an analysis of the concrete incidents reported by the participants.

4.2 Incidents

The 36 reported incidents were divided between 20 study-related and 16 everyday incidents. In general, the participants reported incidents that were important to them and they tended to find the incidents easy to resolve. However, the distribution of the importance ratings was significantly different for the study-related incidents as compared to the everyday incidents (Mann-Whitney test, $p < .01$). Similarly, the distribution of the difficulty ratings was significantly different across the two kinds of incident (Mann-Whitney test, $p < .01$). The study-related incidents were more important to the participants and the everyday incidents more difficult to resolve, see Table 4.

Table 4. Importance and difficulty of the incidents, N = 36.

Question [a]	Study-related incidents	Everyday incidents
	Median	Median
It was important for me to find the information **	7	6.5
It was difficult for me to resolve the situation **	2	3

[a] 1: strongly disagree – 7: strongly agree, ** $p < .01$ (Mann-Whitney test)

All participants reported at least one study-related incident of top importance. For example, Olafur reported the following incident during the first week: "*I needed information regarding access to the Royal Library account. It took me a while to get it working for me, a few phone calls and emails. I was a little bit lost. But, it is working now.*" The library account was important because access to many course readings presumed such an account.

The study-related incidents of high importance were not isolated to a specific point in time, but often explicitly about adapting to educational norms different from those the participants knew from their home university. For example, Daria explained during the interview that she struggled with the expectation to engage in group discussions in class because such discussions were rare at her home university: "*We prefer to study by ourselves. We just read the texts and do our homework. We do not like to discuss it with others*". In a similar way, Musoke explained that in the beginning it was very important for him to find information that could help him manage the reading load and avoid a reading backlog. Later on, information about how to write an assignment and make an oral presentation became important as part of exam preparation.

Participants also encountered everyday incidents of high importance, which in some cases also were difficult to resolve. For example, in the middle of the semester Daria was to receive a parcel from home, but was unable to receive it due to missing import documents. She did not know how to handle the problem and ended up asking her sister for help. Likewise, Musoke encountered a high-importance, difficult-to-resolve issue with the Danish tax authorities, which questioned whether he fulfilled the requirements for tax exemption. He reported this incident in the beginning of October, but it was not until late November that Musoke's tax exemption was confirmed. For several weeks this issue threatened to change his economic situation drastically and caused him a lot of stress:

This issue was really unexpected. […] Having to pay taxes will probably mean that I need to find a job. [It] made me seek out information from home. Information I had not expected I would be needing. Eventually, I had to find information in ways I had not imagined. That disorganized me somewhat. […] Handling this issue has set me back a lot.

The issue was further complicated by uncertainty about the exact requirements for obtaining tax exemption for citizens from Musoke's home country. The information was neither on the tax authorities' website nor known to all their employees.

In general, however, most of the incidents were easy to resolve. A characteristic of the easy-to-resolve incidents was ready access to an authoritative source. For example, Helmut often reported that he asked the professor when he encountered a study-related information need.

Table 5 shows the information sources consulted in resolving the incidents. While the participants could indicate multiple sources for each incident, an average of only 1.36 source types were consulted per incident. That is, the first – or second – source type the participants consulted tended to provide them with the needed information. The source types were not consulted with equal frequency (Friedman test, χ^2(4, N = 36) = 40.84, p < .001). Pairwise comparisons showed that people in the host country and online sources were consulted more often than the three other source types (all ps < .05). In addition, people in the host country were consulted more often for study-related incidents than everyday incidents (χ^2(1, N = 36) = 10.81, p < .01). This difference in the availability of people for consultation might explain why the study-related incidents were perceived as less difficult to resolve than the everyday incidents.

Table 5. Information sources consulted in resolving the incidents, N = 36.

Response option [a]	Study-related incidents	Everyday incidents
	%	%
People in my home country	5	25
People in Denmark **	85	31
Online sources	35	63
Printed sources	10	0
Other sources	5	13

[a] The participants chose one or several of the options in response to the question "What sources did you consult to resolve the situation?", ** p < .01 (χ^2 test of association between study-related and everyday incidents)

The sources used in most of the top-important study-related incidents were people in the host country. In the few and difficult-to-resolve cases several sources were often used. For example, Musoke's issue with the tax authorities involved multiple interactions with multiple source types. In addition to interactions with employees from the tax authorities some of the requested information had to be obtained from Musoke's home university. This turned out to be a cumbersome process:

I sent emails which were not responded to. I made phone calls which people there [in his home country] mostly did not take seriously because "Are you sure you are in Denmark?" But I had lecturers at my [home] university and when I contacted them they helped me. I also had a relative who could go there on my behalf and they would actually listen to him.

Notably information seeking by proxy (his relative) was effective because it replaced indirect communication with face-to-face communication. While Musoke's choice of sources for the tax issue was driven by necessity and availability, Helmut chose several of his sources on the basis of considerations about quality rather than availability. When interviewed about his study-related incidents Helmut expressed his source considerations in the following way: *"If I go to the teacher and ask him what he wants to see then it will be okay – it will be a good result – because he is the person that will grade it so he will be the one that has the information I need."*

Contrary to Helmut, who preferred consulting people when he needed information, it was a challenge for Daria to ask other people for help and information. When she asked other people, it was mostly relatives and friends from her home country. Asking people from the host country, including her professors, was stressful for her because she was shy and because she experienced that her command of English constituted a language barrier. For example, she spent a lot of time translating texts from English to her native language to cope with various study-related situations. She felt that she was on her own when information incidents arose and that being alone made it harder for her to resolve her information needs:

I would feel better if someone else was with me because then I can communicate with her and we can find the information together. […] If I am alone I think I may have to spend more time to address the problem.

With regard to participants' use of online sources Google and the internet were selected for everyday incidents and issues like housing, healthcare, job, and food. Entertainment issues were less frequent. Online sources used for study-related incidents included the in-house systems at the university, such as the learning platform with course materials, which reduced students' needs for actively acquiring or searching study-related material themselves. Social media were only used by some participants, who joined Facebook groups and networks for international students.

4.3   Relations between study-related and everyday issues

In talking about his information needs Helmut emphasized that study-related and everyday needs were constantly "*coming and going, coming and going, and that is totally normal*". This pulse meant that the two types of need were woven into each other. Sometimes they would be in conflict; at other times they would reinforce each other. For example, he had been trying to get a study-relevant job but had met the barrier that employers preferred to hire people who were fluent in Danish: *"That is a bit sad. It makes it difficult to get a better job than cleaning and such."* While fluency in English was sufficient for study purposes, fluency in Danish was necessary to get a job that would yield study-relevant experiences and strengthen his résumé.

Daria's situation was quite different. After she graduated with a bachelor degree from her home university her family helped her to get a job. However, "*my colleagues were not very friendly and I did not like the job. It was very boring.*" Therefore, she was excited when she got the opportunity to study abroad. Apart from the opportunity to get a master degree and thereby a chance of a more interesting job, studying abroad was also a way for Daria to escape her parents' influence on her life. The geographical distance to her parents granted her more freedom, though her parents still expressed their expectation for her to study hard: "*My parents […] want me to focus on my studies. When I tell them I go out with my friend they will give me a hard time.*" Daria utilized her increased freedom to spend time socializing with her friends. Thus, studying abroad afforded new study-related experiences as well as increased independence in everyday-life affairs.

For Musoke the issue of whether he fulfilled the requirements for tax exemption threatened to change the conditions for his entire study abroad. Thus, the information seeking involved in resolving this everyday issue was also critical to his study-related activities. In addition, Musoke's first oral

presentation in class became an important moment for him. In preparing for the presentation he asked his professor what was expected of him. "*When I realized what I had to do – that I had to bring my own perspective – then the anxiety reduced.*" The phrase that he had to bring his own perspective recurred several times during the interview and appeared to articulate how Musoke had decoded the academic norms of his host university. It implied, for example, that he should interpret the course readings himself by thinking critically and drawing his own conclusions. This expectation was quite different from his home university. The notion of bringing his own perspective extended into Musoke's experience that he was to be more independent in his study-related as well as everyday information seeking: "*I realized that I had to act more independently.*"

Olafur had not gone abroad on his own but with his wife and their children. Thus, his study-related and everyday information needs were woven together in ways that he had not imagined possible. Being abroad as a family also meant that Olafur avoided Daria's experience of being alone with her information needs to a larger extent than she would have preferred. Because he was a parent Olafur often acted as a proxy for his children, seeking information on their behalf. For example, he needed to figure out how to make a dentist appointment for them and how to register one of them for sport activities.

5   Discussion

Going abroad to study introduces a disruption in international students' mastery of their lives, where information seeking can help bridge the gaps between the home and host culture. In the following we discuss the results in three parts: (a*) Coping with information needs abroad*, framed by the information-seeking elements in the right-hand side of Figure 1, (b) *Information seeking and cultural adaptation*, framed by the left-hand side and outcome elements of Figure 1, and finally (c) *Implications for research and practice*.

5.1   Coping with information needs abroad

Based on the rich data about the participants' *lived experience* this study supports the relevance of studying international students' information seeking from a holistic perspective (Sin and Kim, 2013). Study-related and everyday information needs of high importance were coming and going throughout the period and, thus, not isolated to one specific point in time. Moreover, the two types of need contributed equally to the participants' stressfulness. The overall trend in the evolution of their stressfulness was that it peaked in the middle of the ten-week diary period. As seen in other studies (e.g., McLachlan and Justice, 2009) inability to close information gaps and resolve the problem at hand fostered uncertainty and worry. It contributed further to the participants' uncertainty and stressfulness that they tended to feel on their own when it came to finding needed information and that they encountered new incidents of important information needs on a weekly basis.

Consistent with McKenzie (2003), we found that *source selection* was central to the participants' experience of their information seeking. While the participants mostly used information sources in the host country, home-country sources were sometimes pertinent. The participants consulted other people and online sources more often than they obtained information through observation of others. When an authoritative source was readily identifiable then information needs were experienced as fairly easy to resolve. In other cases, for example when Musoke experienced severe complications, information seeking by proxy proved a solution. Information seeking by proxy has also been identified as a coping strategy in studies of refugees' information practices (e.g., Hicks and Lloyd, 2016; Lloyd et al., 2013).

As seen in other studies of international students, language barriers may obstruct *source interactions* (Smith and Khawaja, 2011; Zhang and Goodson, 2011). The double language barrier of needing English to study and Danish to participate fully in social interactions means that the participants were partly excluded from social interactions in the host environment, including job opportunities. This finding accords with Meng et al. (2018) in their study of the double language challenge faced by international students in non-anglophone European countries. They found that proficiency in both English and the local language played a critical role in mediating Chinese international students' social and academic adaptation. Apart from language barriers the participants in our study reported few complications concerning their source interactions. It served to reduce the need for complex source interactions that they tended to use few source types and preferred sources that were easy to access. That said, this behavior might be a coping strategy.

5.2   Information seeking and cultural adaptation

For study-related information needs, *sensemaking* was mostly about understanding the educational norms and expectations of the host university. Engaging in group discussions, bringing your own perspective, and understanding exam requirements are examples of norms and formats that were foreign to the participants, fostered anxiety, and took time to assimilate. Many everyday information needs concerned more practical matters, such as being set up for a dentist appointment. These matters did not involve difficult behavior change, but it could sometimes be difficult to make sense of the underlying logic and infrastructure of a Danish website with only sparse information in English.

The participants' *use of information* relates to their study-related and everyday information gaps and helps to restore the order of things. As depicted in Figure 1, we contend that successful information seeking and use contribute to wellbeing, cross-cultural adaptation, and academic satisfaction. The incident descriptions and interviews exemplify how information closed diverse gaps in the participants' encounter with the host environment. Apart from a common interest in adapting to the host culture, we found large individual differences in the participants' incidents and approaches to resolving them. It appeared that personal factors (e.g., the motivation for studying abroad), situational factors (e.g., a sudden change in everyday conditions), and cultural factors (e.g., cultural distance between home and host country) influenced their behavior. Hence, individual characteristics contributed to the participants' information seeking behavior and coping strategies. For two of the participants these characteristics included that they were studying abroad for the second time, thereby presumably having experiences that eased their cultural adaptation.

During the interviews the participants elaborated their information needs and seeking behavior but they also talked more generally about the factors that shaped their experience of studying abroad. A recurrent theme in these more general accounts is that studying abroad has considerable elements of growing as a person – by seizing the opportunity of still being young, by escaping parental expectations, by finding their own perspective, or by travelling abroad as a family. Personal growth ties directly into Savolainen's (1995) conception of everyday-life information seeking as being essentially about the mastery of life. It also shows that whereas adaptation to the host environment is important, so is the freedom from the home environment. Previous studies of international students' information seeking almost exclusively analyze their adaptation to their host environment; very little research has focused specifically on how their freedom from their home environment influences their information behavior. As an exception Jeong (2004) investigates a case in which the freedom is circumscribed by the international students' involvement in their local ethnic community in the host country.

5.3   Implications

We see six implications of this study. First, international students experience study-related and everyday information needs over an extended period of time. We investigated the participants' first semester in the host country but cannot conclude that their settlement was brought to completion during these four months. Rather, host universities should remember that acculturation starts already before arrival and continues long after introductory activities have ended. Researchers should investigate the information needs that emerge when international students have settled.

Second, we find large individual differences across participants. This finding is robust because we have rich data about each participant and because the finding recurs in the diaries as well as the interviews. Given that the participants attend the same department at the same host university, the individual differences in their information needs and seeking behavior must be due to cultural, personal, and situational factors. Thus, acculturation (Smith and Khawaja, 2011) and psychosocial adjustment (Zhang and Goodson, 2011) are key. With respect to personal factors, Savolainen (1995) proposes four ideal types for individuals' approach to the mastery of their lives: optimistic-cognitive, pessimistic-cognitive, defensive-affective, and pessimistic-affective. The ideal types combine cognitive and affective characteristics into a composite description of the individual, for example Helmut appears optimistic-cognitive and Daria defensive-affective. In this way the ideal types may sensitize researchers to a rich set of factors for explaining individual differences in international students' information seeking. In addition, the individual differences call for more individually tailored support by the host institution.

Third, the participants experience their study-related incidents as more important and easier to resolve than their everyday incidents. The differences are fairly small, but consistent. We speculate that a reason for the higher difficulty of resolving everyday incidents is less ready access to authoritative information sources. An additional reason may be that much written information about everyday issues is available in Danish only, thereby reducing the value of online sources, which were the most frequently used source type in the everyday incidents. These reasons suggest that host universities have an underutilized opportunity to provide a central, English-language hub for channeling international students to trustworthy and understandable sources for their everyday information needs. A particular focus point for such hubs should be to channel Information about study-relevant jobs available to international students who speak little Danish.

Fourth, information seeking by proxy facilitates the resolution of otherwise complicated information incidents by overcoming distance and other barriers. We find that information seeking by proxy (McKenzie, 2003) tends to be overlooked in research on the social aspects of information seeking, such as collaborative information seeking research (Shah, 2014). However, Lloyd's (2014) notion of information pooling as a collective coping strategy may be seen as a generalization of information seeking by proxy. Information pooling describes how people "come together to share information in order to create a picture of [an] issue or challenge" (Lloyd, 2014, p. 60). In this genuinely collective strategy for coping with information gaps, people act as proxies for each other in that they mutually contribute retrieved information to a pool from which they all draw and benefit.

Fifth, diaries and interviews produce rich data, but are different methodological genres. At the practical level diaries, like experience-sampling methods (Bolger and Laurenceau, 2013), facilitate longitudinal studies. At the content level the participants expressed more uncertainty and anxiety during the interviews, in particular the individual interviews, than in the diaries. This difference may partly be due to the format of the diaries, which were brief questionnaires, but it shows the strength of multimethod studies. It also shows how different methods may be attuned to different kinds of findings. That is, the widespread use of questionnaire surveys in research on international students may bias our knowledge about their information needs, seeking, and use.

Finally, the intertwinement of study-related and everyday issues makes everyday-life information seeking (Savolainen, 1995) an apt framework for studying international students because it merges a person's different life situations into one joint order of things. Because international students' information seeking process is dynamic and the outcome can oscillate between success and breakdowns, the conceptual model in Figure 1 should be read as spiraling toward satisfaction, wellbeing, and cultural adaptation. This conceptualization of the information seeking process accords with Savolainen's (2017) notion of information needs as both triggers that provide impetus for seeking and drivers that keep the process in motion. While the conceptual model supported our analysis of the study participants, the model needs further empirical elaboration.

5.4   Limitations

Three limitations should be remembered in interpreting the results of this study. First, despite many data about each participant, only four students participated in the study. We contend that the results are internally valid but recognize that they cannot be presumed to generalize to other students and host universities. More participants will, for example, be needed to investigate how international students' information needs and seeking behavior evolve over time. Second, the findings of this study are derived from one empirical setting and should be tested for different home countries and different host countries. Because the interactions between study-related and everyday information needs are many and diverse, future studies should ideally span a range of richly specified and systematically varied settings. Third, we have investigated international students' everyday-life information seeking during their first semester abroad. Many international students go abroad for the entire two years of their master degree. In future work we will compare first-semester experiences with later experiences to analyze how international students' information seeking, cultural adaptation, wellbeing, and academic satisfaction evolve over time.

6   Conclusion

International students' information needs and seeking behavior are shaped by their host university but also by cross-cultural, personal, and situational issues. While the cross-cultural issues set international students apart from domestic students, the personal and situational issues create individual differences that call for more individually tailored support. During the first semester of their stay abroad, the studied international students lacked information about both study-related and everyday issues. These two kinds of issues were intertwined and experienced as equally stressful. In addition, the participants tended to feel on their own when it came to finding needed information. This feeling contributed to the stressfulness but also fed into participants' personal growth and mastery of their lives. Information seeking helps in coping with cultural barriers and breakdowns, but host universities should acknowledge that acculturation starts already before arrival and continues beyond the first semester.

Acknowledgements

References

Agosto, D.E. and Hughes-Hassell, S. (2005), "People, places, and questions: An investigation of the everyday life information-seeking behaviors of urban young adults", *Library & Information Science Research*, Vol. 27 No. 2, pp. 141-163.

Badke, W. (2002), "International students: Information literacy or academic literacy?", *Academic Exchange Quarterly*, Vol. 6 No. 4, pp. 1-6.

Berry, J.W. (2005), "Acculturation: Living successfully in two cultures", *International Journal of Intercultural Relations*, Vol. 29 No. 6, pp. 697-712.

Bolger, N. and Laurenceau, J.-P. (2013), *Intensive longitudinal methods: An introduction to diary and experience sampling research*, Guilford Press, New York.

Catalano, A. (2013), "Patterns of graduate students' information seeking behavior: A meta-analysis of the literature", *Journal of Documentation*, Vol. 69 No. 2, pp. 243-274.

Click, A.B. (2017), "Stress, adaptation, growth: International students' approaches to scholarly research and academic integrity", *Proceedings of the Association for Information Science and Technology*, Vol. 54 No. 1, pp. 642-644.

Click, A.B., Wiley, C.W. and Houlihan, M. (2017), "The internationalization of the academic library: A systematic review of 25 years of literature on international students", *College & Research Libraries*, Vol. 78 No. 3, pp. 328-358.

Connaway, L.S., Dickey, T.J. and Radford, M.L. (2011), ""If it is too inconvenient I'm not going after it": Convenience as a critical factor in information-seeking behaviors", *Library & Information Science Research*, Vol. 33 No. 3, pp. 179-190.

Erichsen, E.A. and Boliger, D.U. (2011), "Towards understanding international graduate student isolation in traditional and online environments", *Educational Technology Research and Development*, Vol. 59 No. 3, pp. 309-326.

Given, L.M. (2002), "The academic and the everyday: Investigating the overlap in mature undergraduates' information-seeking behaviors", *Library & Information Science Research*, Vol. 24 No. 1, pp. 17-29.

Hertzum, M. (2008), "Collaborative information seeking: The combined activity of information seeking and collaborative grounding", *Information Processing & Management*, Vol. 44 No. 2, pp. 957-962.

Hertzum, M. (2014), "Expertise seeking: A review", *Information Processing & Management*, Vol. 50 No. 5, pp. 775-795.

Hicks, A. and Lloyd, A. (2016), "It takes a community to build a framework: Information literacy within intercultural settings", *Journal of Information Science*, Vol. 42 No. 3, pp. 334-343.

Hughes, H. (2013), "International students using online information resources to learn: Complex experience and learning needs", *Journal of Further and Higher Education*, Vol. 37 No. 1, pp. 126-146.

Hyldegård, J. (2009), "Beyond the search process - Exploring group members' information behavior in context", *Information Processing & Management*, Vol. 45 No. 1, pp. 142-158.

Hyldegård, J. and Hertzum, M. (2016), "Coping with private and academic information needs abroad: An exploratory study of international students", paper presented at the SIG-SI Workshop on the Social Informatics of Work and Play at the ASIS&T2016 Annual Meeting of the Association for Information Science and Technology, Copenhagen, DK, October 14-18.

Jeong, W. (2004), "Unbreakable ethnic bonds: Information-seeking behavior of Korean graduate students in the United States", *Library & Information Science Research*, Vol. 26 No. 3, pp. 384-400.

Karkouti, I.M. (2014), "Examining psychosocial identity development theories: A guideline for professional practice", *Education*, Vol. 135 No. 2, pp. 257-263.

Khawaja, N.G. and Stallman, H.M. (2011), "Understanding the coping strategies of international students: A qualitative approach", *Australian Journal of Guidance and Counseling*, Vol. 21 No. 2, pp. 203-224.

Kim, Y.Y. (2001), *Becoming intercultural: An integrative theory of communication and cross-cultural adaptation*, Sage, Thousand Oaks, CA.

King, R. and Raghuram, P. (2013), "International student migration: Mapping the field and new research agendas", *Population, Space and Place*, Vol. 19 No. 2, pp. 127-137.

Liao, Y., Finn, M. and Lu, J. (2007), "Information-seeking behavior of international graduate students vs. American graduate students: A user study at Virginia Tech 2005", *College & Research Libraries*, Vol. 68 No. 1, pp. 5-25.

Lloyd, A. (2014), "Building information resilience: How do resettling refugees connect with health information in regional landscapes - Implications for health literacy", *Australian Academic & Research Libraries*, Vol. 45 No. 1, pp. 48-66.

Lloyd, A., Kennan, M.A., Thompson, K.M. and Qayyum, A. (2013), "Connecting with new information landscapes: Information literacy practices of refugees", *Journal of Documentation*, Vol. 69 No. 1, pp. 121-144.

McKenzie, P.J. (2003), "A model of information practices in accounts of everyday-life information seeking", *Journal of Documentation*, Vol. 59 No. 1, pp. 19-40.

McLachlan, D.A. and Justice, J. (2009), "A grounded theory of international student well-being", *Journal of Theory Construction & Testing*, Vol. 13 No. 1, pp. 27-32.

Mehra, B. and Bilal, D. (2007), "International students' perceptions of their information seeking strategies", paper presented at the 35th Annual Conference of the Canadian Association for Information Science, Montreal, CA, May 10-12.

Meng, Q., Zhu, C. and Cao, C. (2018), "Chinese international students' social connectedness, social and academic adaptation: The mediating role of global competence", *Higher Education*, Vol. 75 No. 1, pp. 131-147.

OECD. (2018), *Education at a glance 2018: OECD indicators*, OECD Publishing, Paris.

Oh, C.Y. and Butler, B.S. (2016), "Newcomers from the other side of the globe: International students' local information seeking during adjustment", *Proceedings of the Association for Information Science and Technology*, Vol. 53 No. 1, pp. 1-6.

Oh, C.Y. and Butler, B.S. (2019), "Small worlds in a distant land: International newcomer students' local information behavior in unfamiliar environment", *Journal of the Association for Information Science and Technology*, Vol. online first.

Oh, C.Y., Butler, B.S. and Lee, M. (2014), "Information behavior of international students settling in an unfamiliar geo-spatial environment", *Proceedings of the Association for Information Science and Technology*, Vol. 51 No. 1, pp. 1-11.

Savolainen, R. (1995), "Everyday life information seeking: Approaching information seeking in the context of "way of life"", *Library & Information Science Research*, Vol. 17 No. 3, pp. 259-294.

Savolainen, R. (2017), "Information need as trigger and driver of information seeking: A conceptual analysis", *Aslib Journal of Information Management*, Vol. 69 No. 1, pp. 2-21.

Saw, G., Abbott, W., Donaghey, J. and McDonald, C. (2013), "Social media for international students - It's not all about Facebook", *Library Management*, Vol. 34 No. 3, pp. 156-174.

Sawir, E., Marginson, S., Deumert, A., Nyland, C. and Ramia, G. (2008), "Loneliness and international students: An Australian study", *Journal of Studies in International Education*, Vol. 12 No. 2, pp. 148-180.

Schwarzer, R., Bässler, J., Kwiatek, P., Schröder, K. and Zhang, J.X. (1997), "The asessment of optimistic self-beliefs: Comparison of the German, Spanish, and Chinese versions of the general self-efficacy scale", *Applied Psychology: An International Review*, Vol. 46 No. 1, pp. 69-88.

Shafaei, A. and Razak, N.A. (2016), "International postgraduate students' cross-cultural adaptation in Malaysia: Antecedents and outcomes", *Research in Higher Education*, Vol. 57 No. 6, pp. 739-767.

Shah, C. (2014), "Collaborative information seeking", *Journal of the Association for Information Science and Technology*, Vol. 65 No. 2, pp. 215-236.

Shoham, S. and Strauss, S.K. (2008), "Immigrants' information needs: Their role in the absorption process", *Information Research*, Vol. 13 No. 4, p. paper 359.

Sin, S.-C.J. (2015), "Demographic differences in international students' information source uses and everyday information seeking challenges", *Journal of Academic Librarianship*, Vol. 41 No. 4, pp. 466-474.

Sin, S.-C.J. and Kim, K.-S. (2013), "International students' everyday life information seeking: The informational value of social networking sites", *Library & Information Science Research*, Vol. 35 No. 2, pp. 107-116.

Sin, S.-C.J. and Kim, K.-S. (2018), "How are we the same or different: information needs and barriers of domestic and international students", *Journal of Academic Librarianship*, Vol. 44 No. 6, pp. 712-723.

Sin, S.-C.J., Kim, K.-S., Yang, J., Park, J.-A. and Laugheed, Z.T. (2011), "International students' acculturation information seeking: Personality, information needs and uses", *Proceedings of the American Society for Information Science and Technology*, Vol. 48 No. 1, pp. 1-4.

Smith, R.A. and Khawaja, N.G. (2011), "A review of the acculturation experiences of international students", *International Journal of Intercultural Relations*, Vol. 35 No. 6, pp. 699-713.

Song, Y.-S. (2005), "A comparative study on information-seeking behaviors of domestic and international business students", *Research Strategies*, Vol. 20 No. 1-2, pp. 23-34.

Ward, C., Okura, Y., Kennedy, A. and Kojima, T. (1998), "The U-curve on trial: A longitudinal study of psychological and sociocultural adjustment during cross-cultural transition", *International Journal of Intercultural Relations*, Vol. 22 No. 3, pp. 277-291.

Wilken, L. and Dahlberg, M.G. (2017), "Between international student mobility and work migration: Experiences of students from EU's newer member states in Denmark", *Journal of Ethnic and Migration Studies*, Vol. 43 No. 8, pp. 1347-1361.

Wilson, T.D. (1999), "Models in information behaviour research", *Journal of Documentation*, Vol. 55 No. 3, pp. 249-270.

Yakel, E. (2004), "Seeking information, seeking connections, seeking meaning: Genealogists and family historians", *Information Research*, Vol. 10 No. 1, article 205.

Yoon, J. and Chung, E. (2017), "International students' information needs and seeking behaviours throughout the settlement stages", *Libri*, Vol. 67 No. 2, pp. 119-128.

Zhang, J. and Goodson, P. (2011), "Predictors of international students' psychosocial adjustment to life in the United States: A systematic review", *International Journal of Intercultural Relations*, Vol. 35 No. 2, pp. 139-162.