First-Year International Undergraduate Students and Libraries

Michael Flierl, Heather Howard, Wei Zakharov, Dave Zwicky, and Sharon Weiner

abstract: This paper investigated how libraries can support the transition of first-year international undergraduate students to a large research university. The research explored the students’ use of libraries, their use of information to learn, and their academic and information literacy learning needs. The methods were a survey (with 135 responses) and three semi-structured interviews. Libraries should focus on basic information for these students, such as the locations of physical spaces; should develop teaching and learning rather than marketing strategies; and should work to integrate the library holistically into programs and courses for international students.

Introduction

Many students from outside the United States spend their undergraduate years studying at institutions of higher education in the United States. In 2006–2007, 541,324 students classified as “international students” took courses at U.S. colleges and universities (3.3 percent of the total student population).1 By 2016–2017, that number had risen to 903,127 (5.3 percent of the total student population).2 International students at U.S. institutions most commonly study engineering (216,932 students in 2015–2016), management (200,312 students), and math and computer science (141,651 students).3 Academic libraries provide varying degrees of services and instruction to help acclimate these students.

Purdue University in West Lafayette, Indiana, ranked fourth in 2016 among U.S. public higher education institutions in number of international students enrolled. It held the top spot for international students majoring in STEM (science, technology, mathematics, and engineering) disciplines.4 Given the importance of the first year of study
for student success, this study investigated how libraries could best support first-year international undergraduate students.

Literature Review

First-year undergraduates face a variety of challenges as they transition to higher education, including difficulty in searching academic library portals and in reading and comprehending scholarly materials. Their experience is often more challenging and stressful than they expect. First-year international undergraduates can encounter further difficulties, including “language and communication problems; adjusting to a new educational and library system; and general cultural adjustments.” These issues have become more important as the international student presence on U.S. college and university campuses has risen steadily over the last 10 years.

The quality of international students’ experiences in the United States often relates to their adjustment to their host country’s language and culture. Maureen Andrade reviewed the literature on international student adjustment and achievement and determined that proficiency with English was the primary factor in international student success. Christine Yeh and Mayuko Inose found that international students’ acculturative stress strongly correlated with their reported English fluency and social support network. Sushama Rajapaksa and Lauren Dundes found that international students showed a higher level of loneliness and homesickness than non-international students. International students may also face financial pressure because they might not fully understand fees, health insurance, and course transfer credits, or how to find employment.

Not all research concerning this population highlights obstacles. A large-scale study showed more engagement for first-year international students than for their domestic counterparts, particularly on measures of academic challenge and student-faculty interaction. Additionally, first-year international students “reported greater gains across the board in personal and social development and general education.”

A large-scale study showed more engagement for first-year international students than for their domestic counterparts, particularly on measures of academic challenge and student-faculty interaction.

Librarians recognize that international students have different information needs than domestic students have, but many libraries lack services tailored for students from other countries. Before college, many international students had never
written a research paper, creating a gap between their experience and the expectations of their professors. This is true for domestic students, too, but they can compensate for their inexperience more readily with their already-established local networks and resources. Some libraries teach workshops on library research and preventing plagiarism specifically for international students.20

That many international students are multilingual can also affect their experience of libraries’ resources and services. Library jargon, idioms, and cultural references can confuse multilingual international students in library instruction sessions.21 Another study reported that, while international students reported feeling comfortable using library databases in English, they were not aware of potentially useful foreign language interface features offered by some major database vendors.22

There is a gap in the library and information science literature concerning how academic libraries can contribute to better transition experiences for first-year international undergraduates, justifying the need for research to develop evidence-based practices.23 According to Meggan Houlihan, Claire Wiley, and Amanda Click, “There has not been a great deal of original research on international students and information literacy during the last 25 years.”24

The aim of this project was to investigate the experiences of first-year international undergraduates related to information and libraries and to begin to develop evidence-based recommendations for practices that would contribute to their success. The research questions were:

1. How do first-year international students use libraries?
2. How do they use information to learn?
3. What are their academic and information literacy learning needs?

Methods

This study considered the library, information, and learning experiences and needs of new international undergraduate students at a research university with a strong reputation for its STEM programs. Purdue University’s population of international undergraduate students has grown over a 10-year period, rising from 1,860 in 2006 to 5,133 in 2016 (a 176 percent increase).25 In 2016, Purdue enrolled 942 first-year international undergraduates. They came from more than 100 countries, with the majority from China and India, and intended to study a range of subjects, although STEM disciplines predominated.26 Approximately 17 percent of the undergraduate student body came from other countries in fall 2016.

The study protocol was a replication of a mixed-methods study used by Hilary Hughes at one Australian and two U.S. universities.27 Hughes adapted the survey and semi-structured interview instruments with permission from Alison Head’s 2013 “Learn-
The semi-structured interview instrument was organized by five overarching focus questions that informed the 13 interview questions (see Appendix B). The instrument was designed to elicit opinions about libraries; how respondents used information for learning; their challenges and strengths; how they learned to use information and libraries; and their suggestions for how libraries might support their transition to college.

The investigators conducted three semi-structured interviews with survey respondents in October and November 2016. The number of interviews was determined by the number of survey respondents who were willing to be interviewed. Interview recordings were later anonymized, transcribed, coded, and analyzed. A framework developed by Hughes guided thematic analysis of the interview transcripts. Data were coded using nine high-level codes developed by Hughes as well as lower-level codes partially created by the research team.

The purpose of collecting both quantitative and qualitative data was to draw from the strengths of both forms of research to more fully answer the research questions. According to the National Science Foundation, “The main virtue of using a mixed method approach is that it enlarges the scope of the analysis.” This larger scope proved useful given the exploratory nature of the study.

Study Population

The study population was the 942 first-year international students enrolled at Purdue for the fall 2016 semester. These students received an e-mail invitation to participate in the study in October 2016. The first 100 students who completed the survey received a $5 Starbucks e-gift card as an incentive. The survey data were intended to identify patterns and provide broad insight concerning the research questions among first-year international undergraduates. For instance, study participants could indicate the types of resources they used or information literacy activities in which they participated.

The e-mail also asked for volunteers for a follow-up interview with the additional incentive of a $10 e-gift card. Interview data were intended to complement survey data, so interview participants were drawn from survey participants. The qualitative data were intended to explore student perceptions and provide additional context for the survey data, asking such questions as why students used certain resources or how information literacy activities helped them to learn.

The three students interviewed were asked demographic questions, their thoughts on being an international student, their opinion of Purdue Libraries and the difficulty of using the libraries, and the differences between their home library and Purdue’s. The home countries of the interview participants were China, Russia, and South Korea. These students were all in the first semester of their first year and intended to pursue degrees in STEM subject areas. All three interviewees had international experiences before coming to Purdue. One attended high school in a country neighboring the student’s nation of origin, one went to high school in the United States, and one attended an international high school with American teachers in the student’s native country.
Survey Results

One hundred sixty students began the survey, and 135 completed it. The response rate was 14 percent; respondents ranged in age from 18 to 25. The majority intended to major in STEM disciplines, mostly engineering, engineering technology, or computer science. The respondents came from 28 countries and six continents, but the largest percentages were from China (30 percent, n = 40) and India (29 percent, n = 39).

Library Spaces

Students were asked what library spaces they had used at Purdue and how they used them. Table 2 shows that they utilized individual study areas mainly to work alone (n = 120, 89 percent), to prepare for examinations (n = 94, 70 percent), and to view library resources (n = 77, 57 percent). They used social spaces in the libraries more for studying (n = 78, 58 percent) than for leisure activities, such as reading (n = 33, 24 percent), personal Internet use (n = 35, 26 percent), or meeting with peers (n = 30, 22 percent). Almost a quarter had attended a librarian-led class in a library (n = 31, 23 percent).

Library Services

Students were also asked to indicate any Purdue library services they had used. The most-used services were the library Help Desk for assistance with finding their way around the library (n = 52, 38 percent) and the IT (information technology) Help Desk for assistance with technical problems (n = 47, 33 percent).

Using Information for an Assignment

When asked to describe one assignment they had completed at Purdue, 77 percent of the students (n = 104) responded and identified the information resources they used for this assignment. The students used online resources primarily. More than half reported using Google (n = 71, 54 percent) and Wikipedia (n = 69, 51 percent).

Challenges

Eighty-six percent (n = 116) of the students responded to the question that asked how difficult it was to find and use information for assignments. Of those, 50 percent (n = 59) found it easy, 38 percent (n = 44) responded neutrally, and 10 percent (n = 13) considered it difficult. The students selected their two biggest challenges in finding and using information for assignments at Purdue. The most common challenge was determining instructor expectations (n = 47, 35 percent). Other identified challenges included formulating effective and efficient online searches (n = 32, 24 percent); identifying, selecting, and locating sources (n = 30, 22 percent); and academic writing and reference (n = 29, 21 percent).

The most common challenge was determining instructor expectations...
Table 1.
Sources of library or information help for assignments

<table>
<thead>
<tr>
<th>Source of help</th>
<th>Number of students who found it helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>I figured things out for myself.</td>
<td>72 (53%)</td>
</tr>
<tr>
<td>Family/friends at university—in person.</td>
<td>58 (43%)</td>
</tr>
<tr>
<td>At the library help desk.</td>
<td>41 (30%)</td>
</tr>
<tr>
<td>Family/friends online—via e-mail, Facebook, etc.</td>
<td>41 (30%)</td>
</tr>
<tr>
<td>On the library web page.</td>
<td>34 (25%)</td>
</tr>
<tr>
<td>At a freshmen seminar/new student orientation.</td>
<td>32 (24%)</td>
</tr>
<tr>
<td>Library information guides on the library web page.</td>
<td>31 (23%)</td>
</tr>
<tr>
<td>Printed library information guides.</td>
<td>26 (19%)</td>
</tr>
<tr>
<td>At the IT Help Desk.</td>
<td>23 (17%)</td>
</tr>
<tr>
<td>Friends/family away from university—in person.</td>
<td>20 (15%)</td>
</tr>
<tr>
<td>In a class at the library.</td>
<td>18 (13%)</td>
</tr>
<tr>
<td>I didn’t know what help was available.</td>
<td>15 (11%)</td>
</tr>
<tr>
<td>I couldn’t find anyone to ask.</td>
<td>12 (9%)</td>
</tr>
<tr>
<td>I didn’t want to ask for help.</td>
<td>12 (9%)</td>
</tr>
<tr>
<td>I didn’t know where to go for help.</td>
<td>10 (7%)</td>
</tr>
</tbody>
</table>

**Help in Using Information**

Students were asked who and what had helped them use the library or information for assignments and where they obtained this help, with the option to select more than one source. As seen in Table 1, a plurality of respondents preferred to “figure things out for themselves.” Sources they found helpful included family and friends at the university (n = 58, 43 percent), the library’s Help Desk (n = 41, 30 percent), and family and friends online (n = 41, 30 percent).

**Library Classes and Information Literacy Learning**

Students were asked what library classes or information literacy learning activities they had attended at Purdue. More than half of respondents (n = 71, 52 percent) reported attending a library information session during a new student orientation program. Approximately a quarter of respondents (n = 35, 26 percent) mentioned learning to use the library independently by means of online or print library materials. Other responses included learning about libraries through coursework (n = 24, 18 percent), attending optional training sessions (n = 27, 20 percent), and receiving individual instruction (n = 25, 19 percent).
Table 2. Use of library spaces

<table>
<thead>
<tr>
<th>Library spaces</th>
<th>Purdue Libraries spaces I have used:</th>
<th>YES</th>
</tr>
</thead>
</table>
| Individual study area in a library, e.g., single table or carrel or study booth or single study room | I have used an individual study area in a library . . .  
To work alone using my own resources or laptop/mobile device. 98 (89%)  
To prepare for examinations. 94 (70%)  
To read or view library resources (print or online). 77 (57%)  
For personal Internet use. 53 (39%)  
To relax or sleep. 26 (19%) | YES |
| Group study area in a library, e.g., large table or group meeting room          | I have used a group study area in a library . . .  
To work collaboratively with other students. 72 (53%)  
To discuss study-related matters with other students. 66 (49%)  
To socialize with classmates or friends. 39 (29%) | YES |
| Computer lab in a library                                                     | I have used a multimedia center / computer lab in a library . . .  
To use photocopier or printer. 84 (62%)  
To access the Internet (for study or personal use). 68 (50%)  
To prepare an assignment using word processor, PowerPoint, etc. 44 (33%)  
To use multimedia equipment. 36 (27%) | YES |
| Reading room / quiet study area in a library                                  | I have used a reading room / quiet study area in a library . . .  
For assignment research. 70 (52%)  
For leisure reading. 34 (25%)  
For personal Internet use. 32 (24%) | YES |
Table 2. Continued.

<table>
<thead>
<tr>
<th>Classroom in a library</th>
<th>I have used a classroom in a library . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For a class or workshop led by a librarian.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Social space in a library, e.g., lounge area, foyer</th>
<th>I have used a social space in a library . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For study.</td>
</tr>
<tr>
<td></td>
<td>For leisure reading.</td>
</tr>
<tr>
<td></td>
<td>For personal Internet use.</td>
</tr>
<tr>
<td></td>
<td>To meet or socialize with classmates or friends.</td>
</tr>
<tr>
<td></td>
<td>To relax or sleep.</td>
</tr>
</tbody>
</table>

Students’ Recommendations

When asked for recommendations about helping international students use the library and information for assignments, as well as library services and library spaces, 32 students (24 percent) responded. All but one suggested increased promotion of the library to international students.

Interview Results

Library Spaces and Services

The students had limited experience with libraries prior to coming to Purdue, but library physical spaces were important to them. Most of the comments coded as “likes/dislikes” concerned physical spaces. The library at Purdue remained open all day, seven days a week; was designed for undergraduates; and offered a variety of study areas. One student appreciated that this library environment allowed her to focus and was open all hours, but she disliked the crowds and limited access to electrical outlets. Another student liked the comfortable furniture. Several of the students’ dislikes appeared to stem from a lack of awareness of other libraries on campus. One student, for example, was annoyed that the libraries did not offer computer science resources. The student did not know about an engineering library that had such materials. Another issue was insufficient storage space for students’ belongings. They recommended better communication about the other campus libraries to resolve the issue of overcrowding.

In the students’ home countries, the library was solely a place to obtain resources, not a place for studying.
The interviewees indicated that the Purdue Libraries were substantially larger than libraries they had used previously. In the students’ home countries, the library was solely a place to obtain resources, not a place for studying. The students discussed the help they could obtain in the Purdue Libraries that was not available in their high school or public libraries. One student found the staff more helpful than that in his or her home library.

Challenges and Strengths in Using Information

The students were asked about their challenges, strengths, and strategies in using information. They found the transition to Purdue challenging, with one student referring to Purdue as “different” and “demanding” and another calling it “a step up” from the student’s previous experience. The primary difficulty the students identified was course content, independent of language and cultural issues. Interviewees mentioned trouble with the speed at which instructors spoke English. They talked about the cross-cultural challenges involved with group work.

The students viewed their knowledge of multiple languages as an asset because it provided access to additional streams of information. One student discussed comparing information from English and Korean sources as a means of verifying facts.

Learning to Use Information and the Libraries

The students mentioned receiving help in using the library from instructors, classmates, friends from church, and family members. One interviewee discussed how helpful it was when the instructor took the class to the library and told them about some of its functions. Peers directed another student to the library, and the third had heard about it during orientation.

Interviewees adapted to their information environment by using various types of information to learn. One student found journalistic writing from the British Broadcasting Corporation (BBC) useful. The student described such writing as “shorter” and “compact.” Another student described experiences with textbooks: “I mean like in high school our textbooks were very useless. They didn’t help us at all. . . And here we have all those e-books and stuff like this, and I thought they were useless the same way, but then I realized that they are actually really useful, a good resource.”

Interviewees described a variety of ways they use information to learn, drawing from their past educational background. The students perceived being an international student as advantageous not only because they could compare information in multiple languages but also because they could draw from previous life experiences. One student described using knowledge of the Great Wall of China as a symbol of a border, for an honors seminar class.
How Libraries Could Address Students’ Needs

The final section of the interview asked students their recommendations for helping international students use the library and information, and for improving library resources, services, and spaces for international students. They discussed the Purdue Libraries primarily in terms of physical space and seemed unaware of many library services. However, one described a positive experience using the library’s chat reference service. Another mentioned the absence of library information in the online orientation program for all new students. All three found promotional materials for other university spaces and services useful and recommended that the libraries adopt similar practices.

Discussion and Recommendations

This was an exploratory study of the library and information experiences and needs of Purdue’s first-year international undergraduate students. The purpose of the study was to understand how these students used libraries and information to learn, and to determine their academic and information literacy learning needs.

Using Libraries

The students who participated in this study valued the physical space of the libraries to study and work. Most students used an individual study area in a library to work alone or took advantage of a library group study area to work collaboratively with other students. Approximately a quarter of the study population attended at least one class led by a librarian, but the students’ use of library services and resources was nevertheless limited. First-year international undergraduates may not know about the multitude of services, resources, and assistance the libraries could offer them. Challenges with the English language may also have played a role. An interviewee noted that reading a 20-page research paper on the library website “would take me a week.” The students’ disciplines may also have affected their library awareness. Engineering and science were the two primary majors for the students, and the first year of study in these academic areas might not require extensive use of the library.

The students did not have specific suggestions for more effective ways to advertise libraries to students, but closer collaboration between the libraries and programs for international students might help. Boundary spanning, the building of bridges between groups to promote cooperation and the exchange of information, is a theoretical construct that could support this recommendation, as Sharon Weiner explains:

The library, student services, institutional advancement, and research and grants are functions that can be characterized by boundary-spanning communication. To be effective, people who work in these areas create partnerships; form relationships with individuals
and organizations; have a broad perspective of the institution; and have much control over acquiring, interpreting, and communicating external information. As a boundary spanning unit, the library should interact with and have an effect on the institution as a whole.34

Student orientation efforts should include basic knowledge about the libraries, with an emphasis on the physical space of the campus libraries. This information is immediately useful for first-year international undergraduates. Fostering successful transitions may also involve librarians integrating their outreach efforts within a larger institutional context, becoming institution-centric rather than library-centric. Librarians should avoid teaching about library services or resources that may not be immediately useful for first-year international undergraduate students.

Using Information to Learn

The interviewees described using a hybrid approach to their research, relying both on online sources and on personal connections. One student talked about parents and grandmother serving as sources for information in high school. The student extended that behavior in college by organizing study groups with classmates. To quote Carolina Valiente, “The importance of membership in an inner group, for example, family, workplace, society, and the positioning of its members is regarded and defended in all cultures (inclusive of many Western cultures) . . . and the tendency is accentuated when students move abroad.”35 Because first-year students want to develop relationships with their peers, learning to effectively navigate a new information environment to succeed academically may be more effective if focused on social aspects.

Survey data on student preferences for free online sources over library resources such as electronic and print books were consistent with the findings from Head’s 2010 study.36 This preference may result from the ample scholarly resources available online for their majors, predominantly in STEM fields. Additionally, students may have been unaware of the physical locations of other campus libraries that were relevant to their discipline. Purdue’s 2017 consolidation of six separate science libraries into a new Library of Engineering and Science may help address this issue.

Academic and Information Literacy Learning Needs

Understanding conventions of attribution was an issue for international students. A 2014 study of Purdue faculty found that almost half of the respondents expected students to know appropriate citation practices prior to taking their courses.37 There is a gap between instructor expectations and the ability of first-year international undergraduates, and first-year students in general, to use information in a higher education context.38 Weiner says, “Curricula should be planned so that students have instruction and demonstrate compe-
tence in these areas before they take courses in which there is the expectation that they know them.”

This study agreed with a similar study at Queensland University of Technology in Brisbane, Australia, that the students’ biggest challenge in using information for an assignment was determining instructor expectations. The educational systems and dominant teaching and learning methods vary from one country to another; Valiente’s summary of differences in communication, writing style, and other aspects of teaching and learning gives an insightful perspective on the implications for learning environments and expectations. For instance, certain cultures or geographic regions prize metaphor in writing more than linear argumentation, or value memorization more or less than educators in the United States. Librarians should learn about these differences so that they can understand the students’ perspectives to plan relevant library instruction. Recognizing the various ways in which first-year international undergraduates may respond to library or information literacy instruction could be beneficial to students and educators.

Collaborations between academic librarians and disciplinary faculty should ideally take place at the curricular level, integrating information literacy instruction in alignment with disciplinary learning outcomes, assessments, and learning activities. Academic librarians can help instructors make explicit their expectations concerning information, such as conventions of attribution and identifying appropriate scholarly resources. Tasking students to reflect on why citation is important may help address the issue of determining instructor expectations regarding information. Additionally, formal or informal mentoring of students by librarians could also help them understand instructor expectations.

The data from this study suggest that facilitating successful transitions for first-year international students can involve some simple strategies. These might include communicating more effectively about the physical spaces, services, and resources of the libraries as well as more engagement in orientation programs. Although more than half of the students attended a library information session during a university orientation program, they lacked information about the libraries or did not remember the information when they needed it. Information literacy programs should include a full range of information-related outcomes, including the most basic, such as “students can identify library locations and describe services and resources available to them.” These outcomes cannot be neglected because students need to build on them to develop a deep knowledge of U.S. libraries and the information environment as they progress through their studies.

Institutional changes could also be useful in addressing issues specific to first-year international undergraduates concerning information and libraries. First-year international undergraduates do not experience information or the libraries in a vacuum, but
rather as part of a larger campus experience. Also, students from different cultures and educational backgrounds, studying different subjects, will naturally have different needs. To lower the barriers first-year international undergraduates face in higher education, conceptualizing academic libraries in a larger campus context via boundary spanning theory could be useful. Moreover, the concept of “advertising” libraries can be expanded and deepened to “teaching and learning” about libraries. This implies an ongoing, progressive building of knowledge about libraries and the information environment, a natural role for a library’s information literacy program.

Survey data also support a move away from focusing too heavily on advertising. Survey respondents reported little difficulty using information for assignments—only 10 percent said they found it difficult to find and use information for assignments, compared with 50 percent who found it easy. Most students (53 percent) also claimed they could figure out information-related problems on assignments on their own. Focusing on information use or library resources devoid of a disciplinary context may not be important to first-year international undergraduates. Focusing institutional efforts on developing student’s abilities to use information and the libraries effectively could be more effectual than simply marketing what is available to students.

**Conclusion**

International students are an important student population for many universities in the United States. Attention to the challenges they experience in their first year of undergraduate studies navigating academic libraries and the greater information world will help them to acclimate and will contribute to their success. Academic libraries should include basic knowledge about libraries in their information literacy programs and orientation efforts, as well as embrace holistic thinking about the role the library can play in a higher education environment. This thinking could include embracing a philosophy of cultivating and supporting student learning about the libraries and the students’ disciplinary information environment. Helpful strategies can range from focusing on students learning about the physical locations of libraries on a campus to integrating an information literacy activity in a classroom where students create their own citation style and explain their methodology. Fostering teaching and learning about libraries and information via collaborations across a campus would be preferable to simply marketing available library resources and services to students who may not need them in the first year.

The world of first-year international students in higher education is complex, and library and information experiences are part of that world. Language, culture, and previous educational environment are some of the factors that influence how students use libraries and use information to learn. The students perceive being an international student as a strength and describe their cultural, educational, and life experiences in positive terms related to their college lives. This study indicates the need to recognize the distinct strengths of first-year international students and work with them to further their understanding of libraries in the United States and the greater information environment.
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Appendix A

Survey Instrument

Understanding International Students’ Library Use and Information Literacy Learning Needs

Thank you.

Your answers are anonymous and no one will be able to identify you. Your participation is voluntary and you can leave the questionnaire at any time if you wish. By completing this questionnaire, you are indicating your consent to participate in the questionnaire.

About the Questionnaire

In this questionnaire, we would like you to know your thoughts—as an international student—about the library and how you use information for assignments at Purdue. There are many different types of information, including facts, statistics, critical commentaries and maps. Also, there are many different sources of information, such as books, newspapers, the Internet, databases and the library. At a university, there are many people who can help you use the library and information, like librarians, professors and tutors. We know that international students have a lot of information-using strengths, including knowledge of different languages and varied cultural backgrounds. We also know that studying away from your home country can be challenging. By completing this questionnaire, you will help us to understand how we can help international students settle more easily into life and study at Purdue. We will use the feedback you provide...
in this questionnaire to improve library services, resources, programs and spaces for international students at Purdue. As a reminder, online submission of the completed questionnaire will indicate your consent to participate in this part of the research.

Question 1: A Little Information about Yourself

Your age?
- 18–25
- 26–35
- 36–45
- 46–60
- 61+

What is your home country?

What is your main language?

What other languages do you know?

What is your major at Purdue?

How long have you been studying at Purdue?

Question 2: What Library Spaces Have You Used at Purdue? How Did You Use Them?

In the following list, please choose YES for ANY library spaces you have used and why.

I have used an individual study area in a library (such as single table or carrel or study booth or single study room)

- To work alone using my own resources or laptop / mobile device
- To read or view library resources (print or online)
- To prepare for examinations
- For personal Internet use
- To relax or sleep
- Other—please specify

I have used a group study area in a library (such as a large table or group meeting room)

- To work collaboratively with other students
- To discuss study-related matters with other students
- To socialize with classmates or friends
- Other—please specify

I have used a multimedia center / computer lab in a library
• To access the Internet (for study or personal use)
• To use multimedia equipment
• To prepare an assignment using word processor, PowerPoint, etc.
• To use photocopier or printer
• Other—please specify

I have used a reading room / quiet study area in a library

• For assignment research
• For leisure reading
• For personal Internet use
• Other—please specify

I have used a classroom in a library

• For a class or workshop led by a librarian
• Other—please specify below

I have used a social space in a library

• For study
• For leisure reading
• For personal Internet use
• To meet or socialize with classmates or friends
• To relax or sleep
• Other—please specify below

Question 3: What Library Services Have You Used?

In the following list, please choose YES for ANY Purdue library services that you have used.

Borrowing / Lending

Borrowing books or other resources from a library

Interlibrary Loan / Document Delivery

Requesting and borrowing resources from other libraries

This mss. is peer reviewed, copy edited, and accepted for publication, portal 18.3.
Information/Academic Literacy Programs

Library orientation or information literacy classes or database training

Yes

Library Help Desk

- Finding your way around the library
- Knowing different types of information (print or online)
- Finding information (print or online)
- Using the Internet for study
- Using journal databases (e.g., ProQuest, Google Scholar)
- Planning or researching an assignment
- Writing an assignment
- Academic English
- Reference
- Other—please specify

IT Help Desk

- Technical problems, for example Wi-Fi, logging on, printing
- Finding online information
- Using the Internet for study
- Using journal databases (e.g., ProQuest, Google Scholar)
- Other—please specify

Question 4: Using Information for an Assignment

Please think of ONE assignment you have completed at Purdue. Briefly, what was the assignment about? What did you have to do? Write your response in the following box

Question 5: What Information Resources Did You Use for the Assignment in Question 4?

What information resources did you use for the assignment you just described? In the following list, please indicate ANY resources that you used and if they were print and/or online. (For some resources, you might indicate print and online).

<table>
<thead>
<tr>
<th>Library resources</th>
<th>Print</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encyclopedias</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dictionaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library catalog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspapers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copies of set readings for your course/unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic journals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other—please specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Journal databases

<table>
<thead>
<tr>
<th>Print</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSTOR</td>
<td></td>
</tr>
<tr>
<td>Emerald</td>
<td></td>
</tr>
<tr>
<td>ProQuest</td>
<td></td>
</tr>
<tr>
<td>Science Direct</td>
<td></td>
</tr>
<tr>
<td>Other—please specify</td>
<td></td>
</tr>
</tbody>
</table>

### Free Internet resources

<table>
<thead>
<tr>
<th>Print</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td></td>
</tr>
<tr>
<td>Google Scholar</td>
<td></td>
</tr>
<tr>
<td>Wikipedia</td>
<td></td>
</tr>
<tr>
<td>Government sites</td>
<td></td>
</tr>
<tr>
<td>Company sites</td>
<td></td>
</tr>
<tr>
<td>News sites</td>
<td></td>
</tr>
<tr>
<td>Other—please specify</td>
<td></td>
</tr>
</tbody>
</table>

### Social media (for your assignment)

<table>
<thead>
<tr>
<th>Print</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blogs / Wikis</td>
<td></td>
</tr>
<tr>
<td>Google docs, Google Drive, Dropbox, etc. (sharing documents and files)</td>
<td></td>
</tr>
<tr>
<td>Google Plus (communities)</td>
<td></td>
</tr>
<tr>
<td>Skype, Google Hangouts (live conversation)</td>
<td></td>
</tr>
<tr>
<td>Twitter, Weibo, etc. (microblogging)</td>
<td></td>
</tr>
<tr>
<td>Facebook, Renren, Qzone, etc. (social networking)</td>
<td></td>
</tr>
<tr>
<td>Pinterest, Instagram, etc. (collecting and sharing)</td>
<td></td>
</tr>
<tr>
<td>YouTube or other video sites</td>
<td></td>
</tr>
<tr>
<td>Other—please specify</td>
<td></td>
</tr>
</tbody>
</table>

### Your own personal resources

<table>
<thead>
<tr>
<th>Print</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books</td>
<td></td>
</tr>
<tr>
<td>Encyclopedias</td>
<td></td>
</tr>
<tr>
<td>Dictionaries</td>
<td></td>
</tr>
<tr>
<td>Other—please specify</td>
<td></td>
</tr>
</tbody>
</table>

### Question 6: Finding and Using Information for Assignments Is Easy / Hard

Finding and using information for assignments is:

- Super easy
- Very easy
- Easy
- Neutral
- Hard
- Very hard
- Super hard
Question 7: Challenges Using Information

What are your TWO biggest challenges in finding and using information for assignments at Purdue? Please choose TWO boxes below.

- Understanding the assignment topic
- Figuring out instructor’s expectations for research assignments
- Using the library catalog
- Using the online journal databases
- Formulating effective and efficient online searches
- Identifying, selecting, and locating sources
- Reading, comprehending, and summarizing materials
- Using information critically and creatively to answer the assignment topic
- Academic writing and reference
- Other—please specify
  If other is selected, please specify.

Question 8: Help in Using Information

Who and what have helped you use the library or use information for assignments? Where did you get this help? In the following list, please choose ANY of the people and things that have helped you.

At the library Help Desk        Yes
At the IT Help Desk            Yes
At a freshmen seminar / new student orientation    Yes
In a class at the library      Yes
On the library web page        Yes
Other—please specify          Yes

In the following list, please choose ANY of the people and things that have helped you.

At the library Help Desk
At the IT Help Desk
At a freshmen seminar / new student orientation
In a class at the library
On the library web page
Other—please specify

In the following list, please choose ANY of the people and things that have helped you.
At a freshmen seminar / new student orientation
At a class in the library
At a class away from the library
During individual consultation
Online chat or e-mail
Other—please specify

In the following list, please choose ANY of the people and things that have helped you.

At a freshmen seminar / new student orientation
At a class in the library
At a class away from the library
During individual consultation
Online chat or e-mail
Other—please specify

In the following list, please choose ANY of the people and things that have helped you.

At university—in person
Away from university—in person
Online—via e-mail, Facebook, etc.

In the following list, please choose ANY of the people and things that have helped you.

**Library information guides**
On the library web page
Printed guides
Signs and notice boards in library
Other—please specify

In the following list, please choose ANY of the people and things that have helped you.

I figured things out for myself.
I didn’t know where to go for help.
I didn’t know what help is available.
I didn’t know who to ask.
I couldn’t find any one to ask.
I didn’t want to ask for help.
Other—please specify.
Question 9: Library Classes and Information Literacy Learning Activities

How have you learned to use the library or to use information? What library classes or information literacy learning activities have you attended at Purdue? Were they intended for all students—or just international students? Please choose ANY library classes or programs that you have attended.

<table>
<thead>
<tr>
<th>For all students</th>
<th>For international students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library orientation program—at the beginning of the semester</td>
<td>☐</td>
</tr>
<tr>
<td>Individual instruction in using the library and/or using information for assignments</td>
<td>☐</td>
</tr>
<tr>
<td>Optional classes / training sessions / workshops—separate from your course / unit</td>
<td>☐</td>
</tr>
<tr>
<td>Classes on searching for and using information—Classes on searching for and using information</td>
<td>☐</td>
</tr>
<tr>
<td>Learning independently to use the library and/or use information—using materials provided by the library (online or print)</td>
<td>☐</td>
</tr>
<tr>
<td>Other—please specify</td>
<td>☐</td>
</tr>
<tr>
<td>None</td>
<td>☐</td>
</tr>
</tbody>
</table>

If other is selected, please specify.

Question 10: Recommendations

Finally, we would love to hear your ideas for improving Purdue Libraries or better meeting the information needs of international students. Please write your recommendations in the following boxes. How can the library improve:

My recommendations are:

- Helping international students use the library?
- Helping international students use information for assignments?
- Library services for international students?
- Library spaces for international students?

Thank you for your time and thoughtful responses to this questionnaire. Your responses will help Purdue Libraries improve the way it helps international students use information to learn. If you would like to receive a $5 Starbucks e-gift card, please leave your e-mail address. A Starbucks e-gift card will be sent to you by (approximately) October 31.

If you are interested in participating in a follow-up interview, please e-mail mflierl@Purdue.edu by October 21 to schedule an interview time. You will receive a $10 Starbucks e-gift card as thanks for participating in the interview.
Appendix B

Interview Questions

Focus question
How do first-year international students think and feel about Purdue Libraries?

Interview question
Interview question 1: Demographic questions
Interview question 2: Thoughts and feelings about being an international student
Interview question 3: What do you like not like about host Library? Why?
What is your favorite space in the library? Why?
Interview question 4: Library use—Hard / easy? Why?
Interview question 5: Difference home / host library

How do first-year international students use information to learn at Purdue?

Interview question 6: Using information for an assignment
Interview question 7: Using information—Differences home / host library

What challenges and strengths do first-year international students experience in using information to learn at Purdue?

Interview question 8: Using information—Challenges
Interview question 9: Using information—Strengths and strategies

How do first-year international students learn to use information and the libraries at Purdue?

Interview question 10: Who and what have helped using the library?
Interview question 11: Library classes
Interview question 12: Using information—tips

How could Purdue Libraries better address the academic / information literacy learning needs of first year international students and so better support their transition to university in their host country, the United States?

Interview question 13: Recommendations—Helping international students use library / information
—Improving library resources / services / spaces for international students?

Notes

2. Ibid.
3. Ibid.
15. Ibid.


25. Office of International Students and Scholars, Purdue University, “International Students and Scholars Enrollment & Statistical Report Fall 2016.”

26. Ibid.


33. The survey instrument used a seven-point Likert scale with three gradations of “Easy” and “Hard.” See Appendix A, Question 6.


37. Purdue University’s Office of Institutional Research, Assessment, and Effectiveness identified and provided e-mail addresses for 1,015 students who met inclusion criteria. However, 943 students registered for classes. It is possible that some students who did not attend Purdue completed the survey.

38. Ibid.


40. Hughes, Hall, and Pozzi, “Library Experience and Information Literacy Learning of First Year International Students at QUT.”

41. Valiente, “Are Students Using the ‘Wrong’ Style of Learning?”