Paths to Reference

How Today’s Students Find and Use Reference Resources

APRIL 2018
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With special thanks to the Reference Research Advisory Group for their invaluable steer and guidance, and to Anja Mohorko for her statistical contributions and expertise.
Executive Summary

This paper builds upon an earlier Oxford University Press (OUP) study – *Navigating Research* – to explore how undergraduate and master's students use reference resources. It focuses on how these students obtain contextual information to support a range of activities for independent study. It considers the nature of students’ needs, their circumstances, and their decision making in order to understand how they seek this information and how it supports their work. It thus offers a new perspective on how reference resources support today’s students.

Research Approach

Research activities comprised of two main elements:

- A multinational survey of students, with 1,089 respondents, to identify major trends
- Twelve in-depth interviews with undergraduate and master’s students to gain a deeper understanding of their needs and behaviour

Key Findings

- Discussions of scholarly reference focus heavily on the impact of freely available information found on the web, but we find that this only partially fulfils students’ needs: Overall, 75 per cent of students in the countries we surveyed rely on library-acquired reference content for their studies. This rises to 92 per cent in the UK and USA, and falls to 68 per cent in India and South Africa.
- Research projects are often seen as the core use case for reference content. Our findings show that for undergraduate and master’s students, reference works support a range of use cases encompassing most aspects of independent study. Besides research, reference information supports class preparation, general reading, and studying for exams.
- Rather than considering reference content solely in terms of which resources satisfy users’ needs, we identify different levels of engagement with different sources. For every type of reference, those using library-acquired materials spend longer finding and reading content than those using freely available material.
- Significant differences between disciplines were found in the type of in-depth reference content that students use. ‘Arts & Humanities’ and ‘Social Sciences’ students were most likely to use library-acquired resources for in-depth content. Students in ‘Business, Commerce & Management’ and ‘Engineering & Technology’ were the least likely to do so.
- Taking a multinational perspective, similarities and differences emerge between regions. For brief, factual information, a large proportion (74%) of students rely on freely available online sources, with little variation between regions. For detailed, in-depth reference content, the majority (69%) rely on resources acquired by their libraries. This tendency is found in every region of our study, but is especially pronounced in the UK and USA (95%), and in Australia and New Zealand (73%). It is true of the majority, but by a smaller margin, in India (60%) and South Africa (55%).
1 Introduction

This paper presents findings from a multinational study of how university students use reference works. It builds on our earlier White Paper, *Navigating Research*, which explored how reference resources support the process of research. That paper was based on in-depth interviews with students, faculty, and librarians in the UK and North America, and it found that among users, and particularly among students, ‘reference’ is not well recognized as a category of resources, but underlying needs for contextual information remain significant. It identified three main types of reference content corresponding to three stages in the research process:

1. Initial orientation (requiring brief, factual information and terminology)
2. Defining the research topic (requiring introductory overviews of topics)
3. In-depth exploration (requiring detailed outlines of topics and of the scholarship relating to them)

This new paper builds upon these earlier findings, concentrating more closely on university students pursuing undergraduate and master’s degrees, and seeking to gain a broad understanding of how reference resources support their work. Studies of reference resources have tended to focus on their purpose as supporting users in conducting research. Drawing primarily on a large-scale survey of students, supplemented by in-depth interviews, this paper explores a range of use cases for reference content, in which these three categories remain meaningful and applicable. By assessing students’ information needs in a range of contexts and examining how users meet them, it offers a new perspective on how reference resources support today’s students.

2 Research Methodology

Research activities comprised two main elements: a large-scale survey of students, and a series of in-depth interviews with students.

2.1 Survey of Students

In order to assess trends in students’ information-seeking behaviour, we undertook a large-scale survey. This approach enabled a broader geographical perspective than that of the previous study, helping to ensure that our overall findings reflect broad trends rather than peculiarities specific to any single territory. The territories covered are all English-speaking, which provided for a degree of comparability, as well as facilitating the administration of the survey.

We targeted undergraduate and master’s students in four English-speaking regions, representing both established and emerging markets. The first region – combining UK and USA – was the focus of the first phase of the research and therefore provides a useful benchmark. The second region – Australia and
New Zealand (ANZ) – represents an additional established market to expand the scope. Two further regions, South Africa and India, represent two emerging markets that are important for English-language resources. In all of these regions, utilization of scholarly reference content is significant; all rank within the top ten countries for online usage of in-depth, scholarly reference works published by OUP.

Student respondents were sourced via lists held within OUP, as well as via external student panels. Overall, 1,089 usable responses were received.

The formulation of survey questions was informed by the findings of the first phase of our research, particularly the observation that limited recognition of ‘reference’ as a category of resources might mask the fact that contextual information remains of great importance for academic users. For this reason, survey questions asked about the circumstances under which students seek additional information and the resources they consult to find it. To help to ensure that these questions were phrased in a way that would be meaningful to students, preliminary cognitive interviews were conducted, in which students explained what they understood the questions to be asking and the mental associations the questions generated. Some revisions were made based on the outcome of these interviews, before the survey was launched.

FIGURE 1 OVERALL REGIONAL REPRESENTATION (UNWEIGHTED) N=1,089

![Regional Representation Chart]

Similar numbers of responses were received from each of our territories, such that emerging and established markets are almost equally represented. However, the proportions in different academic disciplines varied in each of these segments. To take account of this, we used weighted data when exploring differences by subject and region. The weighted data allows us to compare region data without subject differences influencing the results. Equally, it allows us to compare subject data without region differences influencing the results.

In order to focus the analysis on the behaviour and needs of university students following taught programmes, as distinct from research students and others, the region and subject data focuses only on university students pursuing bachelor’s or master’s degrees. This group (N=728) included 74 per cent who are undergraduate students and 26 per cent who are master’s students.
2.2 INTERVIEWS WITH STUDENTS

To support meaningful interpretation of the survey results, a series of eight semi-structured interviews were conducted with undergraduate and master’s students, mirroring four similar interviews conducted in the first phase of the research. Of the twelve interviewees, four study in the UK, four in India, three in the USA, and one in South Africa. The interviews were not designed to be representative, but to support an exploratory analysis of student behaviour when accessing reference content, and to underpin interpretation of the trends identified in the analysis of survey responses. The analysis also draws on the series of interviews conducted with librarians, faculty and researchers in the first phase of our research.

3 Research Findings

Findings from both the large-scale survey and the in-depth interviews are summarized in three thematic sections:

1. Independent Study, Information Needs, and Resource Types
2. Freely available and Library-acquired Resources
3. Engagement Levels and Duration of Resource Usage

3.1 INDEPENDENT STUDY, INFORMATION NEEDS, AND RESOURCE TYPES

Our large-scale survey suggests that for undergraduate and master’s students the range of use cases for reference content extends well beyond research. Uses encompass all of the major activities involved in independent study (see Fig. 2). The previous phase of this project established that users’ recognition of ‘reference’ as a category of resources is declining; rather than referring to ‘reference’ resources, our questions therefore asked about seeking additional background information from sources such as general encyclopedias (including online encyclopedias), online databases, and other websites. Whilst this definition is relatively broad, it enabled us to examine users’ need for reference resources across the range of study activities and to investigate how they met this need.
Most investigations of the usage of reference information (including the first phase of our project) have focused specifically on conducting research as the primary use case. Research was the most commonly identified use case in our survey, but other use cases scored remarkably highly. This applied consistently across regions (see Fig. 3), suggesting that users’ fundamental information needs are similar. As will be seen in section 3.2, the ways in which users meet those needs is subject to greater variation.

Students were asked to indicate how often they need to look for additional information that is not provided in their textbook or course materials.

Responses were provided on a 5-point scale (from ‘Never’ to ‘Always’), with N/A as an additional option. Chart sums respondents who selected ‘Always’ or ‘Very often’.

Data based on weighted frequencies from the undergraduate and master’s cohort (N=717).
For all of the major use cases considered, the three categories of reference content outlined in the first phase of the project (brief factual material; introductory overviews; and detailed, in-depth outlines) remain meaningful and useful ways of distinguishing different types of resources. However, when users turn to reference resources to support their general reading and independent study activities, they are generally seeking specific information in a short time-frame; users thus contrasted between this type of use case and a research process which would involve more sustained and in-depth exploration of a topic. (See Fig. 4).

**FIGURE 4 ILLUSTRATION OF THE EXTENT TO WHICH THE 3 CATEGORIES OF REFERENCE ARE TYPICALLY USED FOR DIFFERENT USE CASES**

Students’ descriptions of their activities suggest that when completing assignments and general course-related reading, they are likely to seek factual information, definitions of terminology, or brief, introductory contextual information. As an undergraduate student suggested, in these cases, time is likely to be more limited, and the information required may be fairly brief and specific:

“If I’m doing a reading and I’m not too sure I understand [it], I just need a quick understanding. But if I’m writing a paper and I need to have a better understanding of it, I would go to our online databases to look for something more in-depth.”

– INTERVIEW, UNDERGRADUATE, SOCIAL SCIENCES, USA
Similarly, an undergraduate student in South Africa explained situations in which background information would be required:

> ‘during tutorial/semester test preparation, and while studying, either to find out more about specific topics (for better understanding) or to find a different explanation where I’m unsure of a specific concept.’
> – SURVEY RESPONSE, UNDERGRADUATE, ENGINEERING & TECHNOLOGY, SOUTH AFRICA

At a more advanced level of study, when interdisciplinary themes are likely to become more significant, students still require contextual guidance, and this requirement arises not only when they are conducting a specific research assignment, but more generally as they seek to orientate themselves within their subject. As a master’s student described:

> ‘The chief difficulty lies in sorting out information about the topic you are working on. For example, right now I’m working on the theme of disability and gender. Even after figuring out what the basic themes are, the hardest thing is working out where are the theories, where is my critical material, what are the literary aspects, and what are the legal aspects? You have to search quite a lot to figure all of this out, and this is always a problem.’
> – INTERVIEW, MASTER’S STUDENT, ARTS & HUMANITIES, INDIA

A similar need for contextual guidance when consulting research articles – whatever the task being undertaken – is also applicable in ‘Science & Mathematics’:

> ‘Every time I read a research paper, I keep looking at the internet... Everything contained in any research paper builds upon some earlier work, so I am always looking back. Sometimes it’s definitions, but it’s also a matter of how the concepts have been defined and used in previous works. So, in part it’s overviews and in part descriptions.’
> – INTERVIEW, MASTER’S STUDENT, SCIENCE & MATHEMATICS MAJOR, INDIA

These use cases apply consistently and with limited variation across subject-groups (see Fig. 5).
3.1.1 Format Choices for Reference Resources

By far the most frequently used format was online material, accessed on the student’s own computer, though significant use of a range of other formats was reported (see Fig. 6). A certain amount of variation was evident across types of reference material, with smartphones more commonly used to access brief, factual content, whereas print, or university computers, were more often used to access in-depth material.7

"For detailed information, it is usually on the laptop, 80 to 90 per cent of the time, because for detailed information, it becomes difficult to read on a smartphone."

– INTERVIEW, UNDERGRADUATE, ENGINEERING & TECHNOLOGY, INDIA

"I use a smartphone at times. The smartphone screen is not ideal, so I only use it when I have no other option."

– INTERVIEW, MASTER’S STUDENT, ARTS & HUMANITIES, INDIA

Another consideration informing these choices is the way in which the information will be used. As an undergraduate student explained:
A consideration of users’ preferences sheds important light on the pattern of format usage, but the interpretation of these patterns is complicated by the fact that these preferences are formed in a context of constrained choices. Some content is only available in print, and for some students, certain library-acquired online resources can only be accessed on their university campus. These constraints, in turn, sometimes affect choices about content. As we shall see below, if certain content is only available in print, users may well seek alternative content that can be found online; if an adequate substitute can be found more quickly in this way, users may value the time saved more than the content sacrificed.

FIGURE 6 FORMATS USED TO ACCESS REFERENCE RESOURCES

Multiple response question; students were asked to select the formats they generally used.
Data based on total sample (N=1079).

3.2 FREELY AVAILABLE MATERIAL AND LIBRARY-ACQUIRED RESOURCES

Our survey questions sought to determine the extent to which students obtained reference material from freely available online sources and from resources provided by library subscriptions and purchases. Because of efforts (such as IP authentication) to simplify access to subscribed online resources, students may not always notice this distinction. For this reason, our survey asked students to choose from a range of resource-types. We subsequently categorized these either as ‘freely available’ or as ‘library-acquired’. Overall, library-acquired resources were utilized significantly more for detailed, in-depth reference works than for briefer information (see Fig. 7).
3.2.1 Regional Variation

Here significant differences can be seen between regions, which, in part, reflect differences between established and emerging markets. At the same time, a similar pattern is replicated for each region: the predominance of freely available resources for brief, factual material; somewhat greater usage of library-acquired resources for introductory overviews; and significantly higher utilization of library-acquired resources for in-depth material. The same shifts are seen in each region, but are most pronounced in the established markets, and particularly in the UK and USA (see Figs. 8–10). Overall, 75 per cent of undergraduate and master’s students in our survey rely on library-acquired reference content for their studies.

Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.

Data based on weighted frequencies from the undergraduate and master’s cohort (N=720).
FIGURE 9 RESOURCES STUDENTS MOST OFTEN USE WHEN THEY NEED TO FIND AN INTRODUCTORY OVERVIEW OF A TOPIC (THAT IS NOT PROVIDED IN THEIR TEXTBOOK)

![Figure 9](image-url)

Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.

Data based on weighted frequencies from the undergraduate and master’s cohort (n=648).

FIGURE 10 RESOURCES STUDENTS MOST OFTEN USE WHEN THEY NEED TO FIND DETAILED, IN-DEPTH, BACKGROUND INFORMATION (THAT IS NOT PROVIDED IN THEIR TEXTBOOK)

![Figure 10](image-url)

Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.

Data based on weighted frequencies from the undergraduate and master’s cohort (n=683).

3.2.2 Time Constraints and Resource Choices

Comments from users suggest that the dominant factor in driving the usage of freely available resources for brief, factual information is time. Many users expressed the view that library-acquired material would be of higher quality or greater reliability, but the time involved in accessing it could make a decisive difference. This is especially true in cases when in-depth library-acquired material can only be accessed
from within the library itself, either because it is only held in print or because electronic resources can only be accessed on-site. Both of these factors were more frequently mentioned by respondents in India and South Africa, but were also raised by those in other regions:

‘Information is more difficult to locate in print books, but the information in print books is more comprehensive and vice versa with online information.’ – SURVEY RESPONSE, UNDERGRADUATE, ENGINEERING & TECHNOLOGY, SOUTH AFRICA

‘Going to the library takes more time, so if I need to work very quickly, I’m likely to look it up online.’ – INTERVIEW, MASTER’S STUDENT, ARTS & HUMANITIES, INDIA

‘The more specialized one is, the less general encyclopedias on the internet like Wikipedia are reliable. In that case, I would consult a printed encyclopedia in my library, but usually as a second step, as it takes longer.’ – SURVEY RESPONSE, MASTER’S STUDENT, ARTS & HUMANITIES, UK

A dominant theme in users’ comments is the trade-off made between the time available and the degree to which the content they use meets their need. In view of this, it is likely that when library-acquired reference resources (whether print or digital) can only be accessed on-site within the library or the university campus, this constitutes a significant obstacle to their utilization. However, rather than being equally applicable to all types of reference content, our survey findings show that this is a much more significant factor for in-depth content than for brief, factual content. In every region, we found that a considerably higher proportion of users turn to library-acquired content for detailed, in-depth background information than do so for brief, factual information. At the same time, regional differences were minimal for brief, factual information (Fig. 8), suggesting that in this category, the majority of users access freely available online resources, regardless of the availability of library-acquired content. For detailed, in-depth information (Fig. 10), however, significant differences are seen between regions, showing that for this category of content, differing circumstances have a far greater impact on the resources to which users turn. Analysis of written responses and interviews with students suggests that the availability of and the ease of accessing library-acquired content (such as off-site access) play an important part in this difference.
3.3 ENGAGEMENT LEVELS AND DURATION OF RESOURCE USAGE

One factor influencing the pattern seen above – considerably higher use of library-acquired resources for in-depth information – is the length of time involved in finding and reading the required information. Factual information is only valuable if it can be found quickly and so users often make a trade-off in which they turn to content they regard as imperfect for the sake of convenience. For more in-depth material, finding high-quality, relevant information often takes longer (see Figs. 11-13). In part, this suggests that the discovery of relevant resources of this type can be complex and time-consuming. At the same time, the survey asked users about their habitual behaviour, and it is evident that a significant proportion felt that investing time in searching for and reading relevant in-depth material was worthwhile. From an analytical perspective, it might seem desirable to separate the time users spend searching for content from the time they spend reading it. However, findings from the previous phase of this project, reinforced by preparatory testing of our survey questions in this phase, suggest that such a distinction would be artificial. They show that users regard seeking and reading reference content as a single process of searching for relevant information that will enable them to move on with their work.

**FIGURE 11 AVERAGE TIME IT TAKES STUDENTS TO FIND AND READ BRIEF, FACTUAL INFORMATION**

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Freely available resources</th>
<th>Resources via library subscriptions/acquisitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 minute</td>
<td>35%</td>
<td>15%</td>
</tr>
<tr>
<td>Between 1 and 5 minutes</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Between 5 and 10 minutes</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>Between 10 and 30 minutes</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Between 30 minutes and 1 hour</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>More than 1 hour</td>
<td>10%</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.*

*Data based on weighted frequencies from the undergraduate and master’s cohort (n=716).*
Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.

Data based on weighted frequencies from the undergraduate and master’s cohort (n=639).

Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.

Data based on weighted frequencies from the undergraduate and master’s cohort (n=674).
3.3.1 Sources of Detailed, In-Depth Background Information

Several drivers shape the differences in how and where users seek different types of content: the in-depth resources are fewer in number; it may take time to assess their relevance; and students might wish to gain a range of perspectives. The most fundamental one is that in-depth resources are less plentiful than brief, factual information:

‘It’s harder to find sources when deep information is needed.’
– SURVEY RESPONSE, UNDERGRADUATE, ENGINEERING & TECHNOLOGY, AUSTRALIA

A related factor is that for in-depth information, assessing the relevance of each source may be time-consuming:

‘Often the problem is there is too much information. It is difficult to find the sort of article that has exactly what you are looking for. Sifting through all of it can be difficult and time consuming.’ – SURVEY RESPONSE, UNDERGRADUATE, ENGINEERING & TECHNOLOGY, USA

Whereas factual information may be obtained from a single trusted source, in-depth sources are more interpretative, and students may wish, or need, to find a range of perspectives. As a master’s student explained,

‘I need to read from various material for a more comprehensive and unbiased understanding.’
– SURVEY RESPONSE, MASTER’S STUDENT, MEDICINE, UK

An undergraduate who reported typically spending between 30 minutes and one hour browsing the library’s print reference collection when looking for in-depth topical outlines explained that:

‘It can be harder to find in-depth information, and sort through the information to find what is relevant.’ – SURVEY RESPONSE, UNDERGRADUATE, SOCIAL SCIENCES, AUSTRALIA

As these remarks suggest, students regard the information they ultimately find as being of sufficient value to merit investing significant time in searching for it. They suggest that for users, challenges in the discovery of detailed, in-depth reference content constitute frequently encountered and significant obstacles to its utilization, and that improvements in this area would be particularly valuable. At the same time, they indicate that relevant content of this type is highly valued when users find it.
### 3.3.2 Subject-Specific In-Depth Resources

The utilization of library-acquired in-depth resources was also subject to significant variation by subject group. The analysis of this variation uses weighted data to control for regional differences. Those in ‘Arts & Humanities’, ‘Social Sciences’, and ‘Law’ were the most likely to turn to library-acquired resources for in-depth background information. Those in ‘Science & Mathematics’ and ‘Medicine’ were a little less likely to do so. Students of ‘Business, Commerce & Management’ and ‘Engineering & Technology’ were those most likely to use freely available in-depth resources, although even here the majority used library-acquired material (see Fig. 14). The reasons for this variation lie chiefly in differences in user needs, and differences between subjects in the types of resources that are freely available.

**FIGURE 14 STUDENTS’ USE OF REFERENCE RESOURCES FOR DETAILED, IN-DEPTH BACKGROUND INFORMATION**

![Bar chart showing usage of reference resources by subject group.](image)

- **Freely available resources**
- **Resources via library subscriptions/acquisitions**

Students’ survey responses were categorized into these 2 broad groups of ‘freely available resources’ and ‘resources via library subscriptions/acquisitions’; these categories were not presented directly to students.

Data based on weighted frequencies from the undergraduate and master’s cohort (N=682).

One undergraduate student studying Information Technology in India described the variety of resources in that subject that could be found online. In this subject area, ‘*Wikipedia is often very detailed and at times that is not needed*’; reading such an article might itself be a lengthy process: ‘*there were many references in that page to things I did not know about, and I had to read many of those to understand the information in the article I was reading.*’ Furthermore, owing to Wikipedia’s model of collective and incremental editing, information in this subject-area is ‘*generally up to date... and you can check the date on which the page was last edited.*’
A master’s student in ‘Science & Mathematics’ regarded Wikipedia as less reliable, but favourably described Scholarpedia – an online, peer-reviewed encyclopedia specializing in Physics, Mathematics, Neuroscience, and Computer Science:

‘The good thing about it is that it is curated by experts. Wikipedia is more open and anyone can post anything on there. It is too open to be entirely trusted. On Scholarpedia, the authors are experts on the topics. The scope is less comprehensive but it is more authoritative.’

– INTERVIEW, MASTER’S STUDENT, SCIENCE & MATHEMATICS, INDIA

In other subjects, since no freely available resources met this purpose, students relied on library-acquired resources. One student studying Psychology relied on the PsycNET database for trustworthy, in-depth outlines of topics and scholarship. Its subject-specific coverage and its scholarly focus were attractive features in this context:

‘I would go to the literature reviews when I need to get a general understanding of a theory or a type of method that was used. That’s the kind of thing that gives you more of an overarching understanding of a theory... [PsycNET is favoured because] it’s specifically just Psychology, so I don’t have to worry about searching through articles that aren’t relevant. It’s nice to know that I’m looking at just Psychology articles and also that they are well supported, so I don’t have to worry about that either.’

– INTERVIEW, UNDERGRADUATE, SOCIAL SCIENCES, USA

4 Conclusion

Our large-scale survey of undergraduate and master’s students found that reference content supports a range of core activities for independent study. Whilst research is the most commonly identified, class preparation, general reading, and studying for exams were also identified by a majority of students as cases in which they would seek contextual information to support their work. This applies consistently across the full range of subject-areas, and across the regions examined.

Whilst students turn to freely available online sources where possible, these only partially fulfil their information need. Overall, 75 per cent of students reported that they rely on library-acquired resources for reference content at some stage in their work. A broad categorization of types of reference content indicates that students are especially reliant on library-acquired resources for in-depth outlines of topics and scholarship. This reliance is particularly marked in the UK and USA and is also considerable in Australia and New Zealand. In India and South Africa, this is true of the majority, but by a smaller margin. Overall,
whilst regional differences are evident, commonalities across regions are considerable, and the most striking difference – between sources of brief, factual information and sources of in-depth material – is seen in every region.

For in-depth content, the proportion of students using library-acquired material varied significantly by subject-group. ‘Arts & Humanities’ and ‘Social Sciences’ students were more likely than others to use library-acquired resources for their in-depth reference needs. Those studying ‘Business, Commerce & Management’ and ‘Engineering & Technology’ were less likely than others to do so, although in these fields, as with others identified in the survey, a majority of students report using library-acquired resources for in-depth content. This variation likely reflects differences in the types of material required for different subject-groups; furthermore, freely available in-depth resources are more plentiful in some subject-areas than others.

For each category of reference content, those using library-acquired material spend more time finding and reading the content than those using freely available material. This suggests that students regard library-acquired content as a useful resource providing distinct and often unique information, explaining why they habitually invest more time in consulting it.

In sum, this study suggests a new perspective in the debate on the place of reference resources in the current information environment. In view of the declining identification with ‘reference’ as a category of resources, it approached the topic by examining the nature of students’ need for contextual information and exploring how this is met. Whilst finding that overall, students report considerable need for such information, the findings suggest that different types of information are obtained in different ways. Rather than seeking to identify trends for ‘reference’ as a whole, therefore, it is more illuminating to consider different categories of resources separately. For brief, factual information students will frequently turn to free, online sources. However, detailed, in-depth contextual information is also extremely important in supporting their work, but is much less commonly provided by freely available resources. For this category of content, students are much more likely to rely on library-acquired resources, and to value them highly.
Notes


2 Data based on weighted frequencies from the undergraduate and master’s cohort (N=728).


4 Although some of these countries are multi-lingual, English is the primary language of instruction in Higher Education.


7 The following definitions of these categories were provided in the survey questions:
   ‘Brief, factual information – names, dates, terminology and definitions’;
   ‘Introductory overview of a topic (typically around 2–3 pages long)’;
   ‘Detailed, in-depth background information – such as a detailed overview of a topic, a list of publications relating to a topic, or a guide to an area of scholarly publications. These are typically 10–20 pages long.’

To read this white paper online, visit [www.oup.com/academic/pathstoreference](http://www.oup.com/academic/pathstoreference)