8 Information Literacy: Culturally and Linguistically Diverse Postgraduate Students and Their Needs

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Contents

Abstract

This chapter brings together two important elements of research at the doctoral level: information literacy (IL) and culturally and linguistically diverse (CALD) students.

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Having answered the question: 'What is information literacy?' the chapter explains that IL encompasses the most effective way to negotiate complex information sources and modes of study. The linkage between information, learning, scholarship and research is integral to successful postgraduate study. Focusing on both the need for IL and the best ways to deliver this support, the chapter provides a model for inculcating IL into the learning experience of CALD HDR students. The chapter's focus on established practices at a regional university demonstrates the efficacy of providing students with targeted and specific support. It is also particularly pertinent for staff and students at a newly established university and this is one of the chapter's most important aspects. It describes the use of different methodologies (face-to-face and online learning support; workshops and seminars) and personnel (lecturers, library staff, supervisors and a learning support academic who is available on site for students). Importantly, as a way to validate the model, its effectiveness is underlined by providing the results of data collected from students.

Keywords
Information literacy (IL) · Culturally and linguistically diverse (CALD) · Higher Degree by Research (HDR) · Phenomenography · Methodologies

Background

Factors addressed in this chapter are both timely and significant for current postgraduate education and would matter to university administrators and postgraduate educators were they to start a center for higher education from new. One factor is the presence of international students and the other is the information literacy needs of these students. The number of Culturally and Linguistically Diverse (CALD) students in Australian universities is already significant and is still growing. They comprise approximately 20% of all university students. To be clear, by no means all CALD students are international students, and domestic students from migrant and refugee backgrounds are also CALD students. In this chapter, however, the focus will be on international students, meaning students enrolling from their home country and normally with the intention of returning to their home country following completion of their postgraduate study. In 2016, according to the Australian Government, over 700,000 international students were enrolled in Higher Education in Australia across a number of sectors. The figures are high elsewhere in the western world. The UK's Home Office accounted for 438,010 students who were domiciled in the UK over 2015–2016, of which a significant proportion were postgraduate students. In 2016, media reports in the USA noted that the numbers of international students coming to study there were at all-time highs. All of these students, but particularly those who are enrolled in Higher Degree by Research (HDR) in Australian tertiary institutions, need support in many areas of their study, and specifically in the field of information literacy.

Purpose

The aim of this chapter is firstly to explain the needs of CALD HDR students (in this case at an Australian regional university) in relation to information literacy (IL); secondly, to outline the support they can receive that will assist in inculcating information literacy; and thirdly to assess the way in which this support will benefit students.

Design/Method

The study used a qualitative explorative approach to gain rich in-depth data. Eleven CALD HDR students participated in a hybrid questionnaire and semi-structured interview which focused on core questions about their understanding of information literacy, the effectiveness of key stakeholders, and the value of programs provided across the university to inculcate information literacy. The results and conclusions of this research are embedded in this chapter following discussion of the pedagogical and theoretical perspectives that are apparent on IL.

Introduction

Focus

This chapter has three foci: first, to explain the complexities of information literacy as it relates to HDR students (and specifically CALD HDR students) and the need to provide learning support to CALD students to increase their familiarity with information literacy (IL); second, suggestions for the most effective ways to deliver this support; and third, an evaluation of the efficacy of stakeholders and support systems. Twenty-first-century universities should take heed of all three points. The market for international students remains important, but as a consequence so does the need for adequate and informed support for this cohort. Based on research, this support needs to be specifically tailored to the needs of individual students while also incorporating some invaluable group work. A major area where developing support is essential is IL, or the ability to identify, locate, critically evaluate, and use information in an articulate and grammatically correct way. IL is essential for all students, but particularly for CALD students, those having a specific cultural or linguistic affiliation by virtue of their place of birth, ethnic origin, religion, or preferred language (Ethnic Communities' Council of Victoria 2012). IL plays a central role in the successful negotiation of academic discourse, particularly for CALD students who have traveled internationally to be HDR students.

The Learning Framework

CALD HDR students have specific linguistic and cultural needs, and for these students learning is most effective if it is student centered. Thus IL may be considered within a phenomenographic (or relational) conceptual framework: that is,

"earning as experienced from the perspective of the learner" (Andretta 2007, p. 152). It is – and this point is significant – the foundation of independent learning (p. 152). As they undertake the research for their dissertation, it is important for HDR students to come to terms with this type of learning. Therefore, the support and the learning strategies that will be presented in this chapter will have a phenomenographic focus. Students will benefit because their study will be student-centered and they will approach the tasks in an independent way to construct and present new knowledge. Where possible, it will involve deep rather than surface learning (Marton 1994, p. 4424); this point refers to "the learning process as a concept of understanding and discovering" (Saljo 1979, cited in Aharony 2006, p. 853), as part of the phenomenographic framework. That is, it will be predicated on insight and comprehension. In order to develop a deeper conceptual understanding of the material they are studying, repetition, reiteration, and reflection will be essential to reinforce the notion of IL as "a recursive experience rather than a simple ladder of skills to be attained" (Bent et al. 2007, p. 84). Students do not learn effectively from doing something once – they need reinforcement in all aspects of IL and this is best done on an individual basis.

The Student Cohort

The students who are the focus of this chapter are enrolled in a Higher Degree by Research (HDR) at an Australian regional university, the University of Southern Queensland (USQ). They have either made the transition from an English language intensive pathways program into their HDR (including Research Masters, PhDs and Professional Doctorates) or have entered their HDRs directly from undergraduate study at an overseas university. The umbrella term "HDR" will be used to encompass all cohorts of students who work with supervisors, have chosen a topic for their dissertation, and are researching for their proposal or their dissertation, or they completing their doctorate through the publication of articles.

They are confronted with a pedagogical environment marked by more challenging tasks, including comprehensive and detailed research, complex readings, the demand for critical thinking, and the necessity of using appropriate academic English, in both written and oral modes. It is at this stage that many of their potential problems – and therefore their need for ongoing support – become apparent.

Information Literacy

Information literacy is a complex set of ideas and processes. An important early conceptualization is Zurkowski's (1974), when he noted that:

> People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range

> of information tools as well as primary sources in molding information solutions to their problems. (p. 6)

Since that time, definitions have been elaborated on by many educational theorists. Johnston and Webber (2003) offer that information literacy is "a response to the cultural, social and economic developments associated with the information society." Therefore, it does not exist in a vacuum or without purpose. Their explanation takes into account the vast and increasing amount of information available to students. However, the meaning of IL goes beyond this limit; Johnston and Webber (p. 337) explain that IL includes the ability to identify, retrieve, evaluate, adapt, and organize information, and to communicate ethically within a context of review and reflection. Inherent within this meaning is a recognition of the need for information and the ability to determine the nature and extent of the information needed. It is, as Bruce (in Johnston et al. 2014, p. 553) explains, "experiencing different ways of using information to learn." These requirements are essential aspects of postgraduate study.

The significance of IL to postgraduate study is underlined firstly by the increasing amount of information that students (and in this case CALD HDR students) need to negotiate and secondly by the amount of recent research into the area. The definitions given above have been augmented by the Association of College and Research Libraries (ACRL) (2015); IL is "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning." This definition is important because, as Coonan (2011, pp. 5–6) explains: IL is "a continuum of skills, behaviours, approaches and values that is so deeply entwined with the uses of information as to be a fundamental element of learning, scholarship and research." The linkage between information, learning, scholarship, and research is integral to successful postgraduate study. These are complex issues; for HDR students, the use of information to generate and effectively use new knowledge is essential, but it may be a challenging process. For students whose first language is not English, and whose prior educational experiences do not match those of students whose first language is English (as will be explained below), it may present even more impediments.

Information Literacy and CALD Students

The importance of providing ways to increase understanding of IL has been previously considered by researchers but it has not been widely discussed in relation to CALD students, and in particular to CALD HDR students. By addressing the issue of IL in relation to CALD HDR students specifically, this chapter stands apart from other investigations of IL. According to the Australian Education Network, in 2016, it is common at regional universities for enrolments of CALD students to align with national figures; that is, they comprise approximately 20% of the total enrolment. Almost 10% of postgraduate students in Australian regional universities are

international. These figures indicate that the continuing enrolment, retention, and success of HDR CALD students is therefore of vital importance to the Australian tertiary sector in general but also to regional universities specifically. These figures are congruent with the demographics elsewhere.

Regardless of entry method or language proficiency at entry, the experience of CALD HDR students is different from that of students whose undergraduate studies have been undertaken at Australian universities. Foster (2012, p. 587) comments: "Differences in social and academic culture, academic aptitude or preparation [and] inadequate language fluency [are] problems facing CALD students." The complexity of the issues they face indicates that IL is integral to their successful progress and completion while at the same time being somewhat difficult to attain.

The information relating to IL cannot be embedded into a specific university curriculum, even into a PhD or other type of doctoral program that includes coursework; the focus must extend beyond the supervisor and the university library. That is a major point of our discussion. That being the case, as Curzon (2004, p. 32) points out, although librarians are an essential part of the inculcation of IL, faculty members (and particularly supervisors) but also learning support academics should also be "aware of what information literacy is, why it is important, and what problem it is solving." While this is an important issue, comparatively little research has focused on linking the stakeholders, that is, librarians, learning support academics, and supervisors cooperating in providing learning support to help students. Support would be accessible to all stakeholders and should incorporate a whole-of-campus approach to facilitate the inculcation of IL focusing on their collaborative, interactive responsibilities. By offering new ideas we would ensure that the support develops in the students an ability to recognize information literacy skills and apply them in a progressive, incremental, and cumulative manner throughout their postgraduate study.

By considering IL as an umbrella term for two specific literacies – academic literacy and digital literacy – a deeper understanding is revealed. Each of these is essential to comprehending the pedagogical requirements of CALD students who are studying in Australian tertiary institutions and the demands placed on them.

Academic literacy takes the student beyond the concept of reading and writing effectively: "An academic literacies approach conceptualises writing at the level of epistemology rather than as a set of skills that need to be learnt, or an array of problems that need to be overcome" (Hocking and Fieldhouse 2011, p. 44). Therefore, academic literacy relates to comprehending academic discourse and the way it is produced, structured, and presented. As part of their epistemological approach, students would be expected to both understand and incorporate ideas taken from reading, but this expectation may be problematic. Johnston et al. (2014) cite Hall (2011) who argues that because some cultures are based on an oral tradition, a number of CALD students may find difficulty in reading complex texts. But included in these important aspects of academic literacy are the ability to communicate, to think creatively and critically, and to display both independent learning and the ability to collaborate effectively. All of these elements are important but, as established above, they may need to be carefully encouraged and inculcated in CALD HDR students. The link between reading and understanding, and then the

ability to use the knowledge in a clear and grammatically correct way is a challenge for CALD HDR students.

Digital literacy is now considered to be a broader set of skills than the once prevailing definition of basic skills to perform simple tasks using a computer (Burton et al. 2015, p. 152). It is the ability to use technology effectively, and in the case of tertiary students, it relates to the location, evaluation, and use of information in and on multiple digital formats and platforms. These skills, because they are multifaceted and include the ability to read and interpret while using digital technologies, comprise more than mere competence in computer use. For HDR students, digital literacy covers an essential set of skills that relate to research about their dissertation topic. Digital literacy facilitates "collaborative, interactive and customized modes of learning" (Marstio and Kivelä 2014, p. 66). Many of these learning styles relate to the increased access by students of the internet.

This notion is a point of intersection between digital literacy to academic literacy, but also indicates that: "Education and learning are conducted in diverse places that are physical and virtual in nature" (Marstio and Kivalä, p. 68). At many universities, much information is only accessible online. Significantly, it is typical of a great deal of the support that is offered to students at many regional universities by a language learning support academic to be completed via email, and although the students may find this form of communication useful, they will also need the face-to-face reinforcement.

Research reports that many students believe that because they can search the internet, they are information literate (Stubbings and Franklin 2006). However, sufficient research has been done to throw significant doubt on Prenksy's once ubiquitous notion of the digital native and to indicate the gap in skills between the so-called natives and actual digital demands (Burton et al. 2015).

Although they may not realize this at first, many students have limited digital literacy skills and a limited awareness of the importance of digital literacy. The digital literacy gap includes CALD students, who may have had little access to the internet before studying overseas (Antonio and Tuffley 2014). The large repository of knowledge on the internet, which is an essential part of the information that is available, can only be accessed by those who are digitally literate.

Digital literacy also incorporates a repertoire of competencies that enable people to access, analyze, evaluate, and create messages in a wide variety of media modes, genres, and formats (Buckingham 2003; Hobbs 2005, cited in Kamerer 2013). Identifying point of view is one element, but so too is critical thinking, encompassing the ability to identify bias and assess the potential for misrepresentation. At its core is the ability to research effectively for the purpose of delivering complex oral and written pieces of work, particularly at the postgraduate level; because of its relationship to research, digital literacy is essential for all students, but specifically for CALD HDR students (Pérez et al. 2010, cited in Kamerer 2013, p. 5). One salient feature of digital literacy is that "it is a basic skill, one that supports many others." As with other elements of IL, therefore, it does not stand alone.

These are significant issues, and they provide some early answers to the question: why is it important for CALD HDR students to be information literate? Although

this chapter has already touched on the need for IL, the answers encompass many areas of postgraduate tertiary study. Rockman (2004, p. 9) explains:

> Studies have shown that students are entering college and university environments without fundamental research and information competence skills (for example, the ability to formulate a research question, then efficiently and effectively find, evaluate, synthesize, and ethically use information pertaining to that question).

Here, Rockman is arguing that IL is an essential attribute for students (especially postgraduate students) who need to study effectively. Hayes-Bohanan and Spievak (2008, p. 178) reinforce the point, while expanding on Rockman's proposition: "Information literate students are more likely to … manage their resources more effectively, thus making effective use of content area knowledge and analogies to produce an on-target insightful solution." The effective use of information is clearly essential for all tertiary students. These challenges are especially important for CALD students and in particular for HDR students. However, as Hayes-Bohanan and Spievak (2008) explain, it is often the case that students underestimate both the need for IL and their lack of appropriate skills. It not be until they start to research for their dissertation topic that students are faced with their deficiencies in what Rockman (2004, p. 9) has described as the ability to "formulate a research question, then efficiently and effectively find, evaluate, synthesize, and ethically use information pertaining to that question." These are all real difficulties faced by many students and they require the judicious use of emails supplemented by face-to-face support to help them develop those essential skills over time.

Research

The research cited here will be substantiated by empirical research conducted at one regional Australian university in order to consider effective forms of face-to-face and online support for CALD HDR students. Our study tests issues that have an impact on the success of CALD students to relate to IL (Woodman and Yarlagadda 2015). These issues including the following points.

CALD students in many universities are expected to conform to the norms of Western academia while coming from education systems that are no less valid, but very different. As Peelo and Luxon (2007, p. 68) explain, "students' social, cultural and political background … all signify that learning means different things to different groups." CALD students may already have undergraduate or postgraduate degrees from their home universities and may come from university traditions markedly different from Australian academic culture; despite their extensive academic experience they may lack an understanding of the complexity of IL, as well as its significance for successful progression in their studies. For CALD HDR students to succeed, they must come to terms with the ways of learning that are privileged in Australian universities, which in turn take their cue from universities in the UK and the USA.

While a connection with effective ways of learning is predicated broadly on cultural understanding, it is also more narrowly based on reading for comprehension. For many CALD students, "weak language skills can lead to ... an inability to engage with the learning process" (Murray 2013, p. 300). Students typically arrive at university with minimal English and have a limited time to become proficient. Yet in order to achieve satisfactory progress and learning outcomes, students must be able to access and comprehend academic discourse and be able to use the ideas expressed in texts (Hocking and Fieldhouse 2011). For many CALD students at either undergraduate or postgraduate reading for comprehension is challenging. Badke (2002) is among a number of researchers who point to the lack of appropriate written and oral English skills among CALD students. A background that privileges oral traditions may prove problematic for students. Another major difficulty facing CALD students is that, although much of their language instruction has focused on the written word, reading for understanding (rather than reading by translating word by word) remains challenging for them. Once students move to HDR studies it becomes a more significant problem because of the large number of often complex texts that they will have to read, evaluate, analyze, and then make use of. These difficulties lead into problems with research, when students also need the ability to relate what they are reading to the question to be answered.

An associated difficulty is that writing not just accurate English but academically appropriate English while constructing a coherent argument is often confronting for the students. Rather than being considered merely as a skill to be mastered, academic writing can more properly be considered to be the process of coming to terms with "the complex interplay between linguistic practices, and the social and cultural contexts, and meaning systems, of both the disciplines they are studying and the institutions they are studying in" (Hocking and Fieldhouse 2011, p. 36). In this area students must conform to the norms of Australian tertiary culture. However, for CALD students, Hocking and Fieldhouse explain, this is difficult because they are negotiating so many complex issues while still becoming more accomplished in their use of English.

The challenge that many CALD students face with English skills is a diverse issue that modulates into a problem for library access and use. One problem faced by CALD students is communicating with librarians. As Hughes (2010, p. 79) explains: "Challenges experienced by international students often extend to their ... interactions with library staff." Lack of confidence in expressing themselves clearly, doubt about protocols involved with asking questions, or even uncertainty about whom to approach are all impediments to clear communication in the library. This issue goes beyond mere communication difficulties because the library and the librarian are central to the inculcation of IL.

Hughes (2010, p. 79) indicates that there is often a deeper problem: "Differing language structures may also underlie difficulties international students experience in navigating the library." A significant challenge is that faced by students who are accustomed to reading from right to left having to "source information in a library with a left to right shelving system" (p. 79). In a large physical space, this confusion can lead to added unwillingness to try to access library information.

A library is not a universal constant in terms of form, content, access, or operation. As Liao et al. (2007, p. 6) explain, many CALD students do not have a clear understanding of the way university libraries function. They point to the experience of a number of students with experience of studying in other countries: "Many foreign libraries [do] not have the benefit of open stacks and trained librarians" whereas university libraries in Australia are characterized by both. More specifically, Hughes (2010) conducted a survey among 25 international students at two Australian universities that identified a number of problems relating to library use. These varied from lack of knowledge about the intricacies of library catalogues to lack of awareness about what constitutes an academic library and what it can offer them.

Mehra and Bilal (2007, p. 10) point to an additional difficulty facing CALD students and relating to library use: that of "using digital interfaces mainly due to their inadequate level of English language skills." The interface is the students' point of interaction with an online resource such as databases and catalogues; often visually complex in design and text-heavy in terms of instructions, an interface is a challenging point of contact to navigate. Using web directories in English is obviously problematic for these students. Many have no familiarity with digital resources, especially library catalogues based on the internet and databases, or have little expertise in the use of electronic media, and their lack of proficiency is reflected in the many problems they demonstrate. The lack of understanding can be linked to the information in Hughes's survey revealing that the problem is more deep seated than just unfamiliarity with Australian tertiary libraries: "only eight [of the 25] had previously used a university library" (2010, p. 81). Hughes's research indicates that CALD HDR students' ability to use a library effectively is acutely problematic.

One fundamental aspect of IL is the ability to research effectively. Effective research includes the ability to identify, locate, critically evaluate, and use information, but Hughes and Bruce (2006, p. 36) report that many CALD students have little experience of the type of independent research required for postgraduate study: one reason for this is that students may be "challenged by the . . . problem-based styles of learning and related use of online information resources" that are required at the HDR level (p. 36). This point is where the need for deep learning becomes more apparent. At the same time, when these students are engaging with their postgraduate studies and independent research is more crucial, they are faced with other issues that add to the difficulty of effective research, particularly that of critically evaluating the information they find. Thompson (2013, p. 415) insists that "critical thinking skills are essential in using information and integrating source material into any successful essay or paper." However critical thinking, as part of the research process, and as mentioned above, is one of the aspects of IL that may cause problems for CALD students. Carmichael and Farrell (2012) define critical thinking as: "analysis, making judgements, problem solving, evaluating [and] questioning." However, as Hughes and Bruce (2006, p. 36) have ascertained, many CALD students have an "unreflective, non-critical approach to all aspects of the search process, especially the evaluation and selection of suitable resources." The choice of information, together with careful assessment of the information, is crucial to effective research. These research problems that are intensified by a lack of critical thinking will inevitably have an adverse effect on the

quality of the work prepared by CALD HDR students. Moreover, critical thinking depends on a confident command of the resources of language (UWA 2008) and, as established above, many CALD students have inadequate language skills. All of these factors can impact on CALD students' approach to study because: "There is a convergence between information literacy skills and academic learning skills" (Kimmins and Stagg 2009, p. 1). The point made by Kimmins and Stagg reinforces both the importance and also the complexity of information literacy. This is one of the areas where individual attention can be crucial for students so that they can develop their language use, their understanding, and their critical thinking skills.

Tertiary students, as pointed out by Johnston and Webber (2003, p. 336), require "information well fitted to information needs, together with critical awareness of the importance of wise and ethical use of information in society." The ability to use research material is closely allied to the appropriate use of information, an issue that is especially pertinent to CALD HDR students, and this brings us to the multifaceted matter of plagiarism. Yeh (2009), cited in Johnston et al. (2014), points to an issue that is closely aligned with the struggle to read and comprehend: HDR students often have difficulty in paraphrasing texts in English because their reading skills are limited. Stubbings and Franklin (2006, p. 3) point out that the problem related to plagiarism in tertiary institutions is often compounded by students' misunderstandings of the way to locate information and the importance of acknowledging sources. Fawley (2007, p. 72) widens the debate, questioning whether cultural differences are responsible for plagiarism among CALD students studying in Australia. In many educational cultures, Fawley contends, the process of studying has been based on rote learning where there is no opportunity to think critically about the material being read. A further problem can relate to cultures where the focus is the group rather than the individual, so collaboration is not perceived as plagiarism and many have little or no experience of the difference between independent and collaborative study. And finally, although the difficulty in reading and understanding complex sources is by no means confined to CALD students, they may face specific problems, and that complicate the issue of plagiarism. When a student is using English to communicate, lack of confidence in their ability to read and understand, write cohesively, using correct grammar, sentence structure, and even in- and end-text referencing, may encourage them to copy from a source. For CALD HDR students, this can be a significant problem.

Many students, but particularly CALD students, may be overwhelmed by affective issues, relating to cultural issues, to the university in general, to the programs of study (and particularly HDR study), and to the library, which is central to their research, and on which so much of student work depends. University libraries are large and complex spaces in both actual and virtual realms. As Hughes (2010, p. 80) comments: "the affective dimension is connected with both the environmental and cultural-linguistic dimensions. . .. Challenges in using the library may cause feelings of confusion, anxiety or frustration." For students, these feelings may coalesce with language difficulties, with comprehension of not just the material but also the learning styles, and an unwillingness to display independent learning skills and may impede the free access to information required by the students. These affective issues bring together many of the problems facing CALD students.

Collectively, these issues reinforce the centrality of IL to the success of students who are faced with the challenge of negotiating complex information sources and modes of study. The problems outlined above indicate that sector wide, current forms of preparation are inadequate. IL is therefore a significant factor in student achievement, but it is equally important (but perhaps more difficult to achieve) for CALD HDR students. As explained above, adjusting to academic life in Australia may pose specific problems for CALD students.

Meeting the IL Needs of CALD Students

Who should be concerned with and concerned about IL for CALD students? Prior research has suggested different stakeholders (librarians, academics, CALD students, or disciplines such as information science), but our emphasis extends beyond specific or separated realms of operation. In particular, librarians have often been the focus of the inculcation of IL. The library is critical to many aspects of IL; however, it must be made clear that, as Breivik (2004, p. xii) explains, "information literacy is a learning issue not a library issue." More specifically: "Information literacy is about understanding information and how it works" (Badke 2010, p. 130). Thus, as Badke comments, the notion of understanding information implies far more than using a library whether in virtual or physical modes. It must be recognized that the literacy problems being experienced by students and the provision of appropriate support are complex issues, so it is essential that any support and any learning resources that are developed to inculcate IL are as effective, targeted, yet comprehensive as possible.

The Inculcation of IL

The research outlined above indicates the challenges faced by CALD HDR students. This chapter will now move on to provide a brief outline an effective way to inculcate IL for CALD students who are undertaking the first stages of a postgraduate degree at an Australian university. As mentioned above, support is most effective if it is provided by a range of people, including research librarians, supervisors, and a learning support academic who are available on site for students. These support systems include the following factors.

At the regional university that is the focus of this study, it was determined that because CALD HDR students were in need of quite targeted and specific support in relation to IL, a program would be instituted. Over the past 2 years, the university's Office of Research and Graduate Studies has sent out invitations to students to register their interest in being involved in the program. In 2016, 20 students were involved. In 2017, 40 students are participating. These students come from diverse cultural and linguistic backgrounds. The program is flexible and is targeted to the needs of individual students. Students may be at any stage in their postgraduate studies, from preparing for confirmation to being ready to

submit their dissertation. They may be writing journal articles or preparing conference presentations. The program operates in a way that is student directed yet under the guidance of a lecturer and with liaison with librarians and learning support academics. Students are able to consult at any time, to ask questions about the development of their academic writing, and to receive guidance. Their focus may be reading, thinking critically about what they have read, constructing their argument, or writing clearly, using correct grammar. Online contact is reinforced by one-on-one meetings with the learning support academic. Students send in work when they feel it is ready to be appraised; this is then returned, and typically, students will make an appointment to ask questions that need further clarification. A great deal of time is spent communicating with students to maintain the momentum with their work and at the same time to create a community of learners.

Information about information literacy and support for the students is provided by research librarians, including:

– Classes on the use of Endnote
  One-on-one help about the following issues that relate to information literacy
– Establishing a research profile
– Measuring, maximizing, and managing research impact
– Increasing research impact using social media
– Data management
– Setting up the students' ORCID affiliation

The Learning Advisor (HDR) provides information on the following topics that also increase the students understanding on information literacy:

– Managing supervisory relationships
– Critical thinking
– Project design and management
– Reviewing literature
– Preparing for confirmation
– Conference presentations
– Thesis writing

Academic Writing Boot Camps are held three times a year and are specifically targeted to HDR students. Because CALD students mingle with other HDR students, their horizons and their fields of experience are broadened. These Boot Camps provide students with the opportunity to write in an intensive way and to spend dedicated time with professorial staff who can provide expert advice on writing either a dissertation or a journal article.

One academic presentation workshop is held each year, intended to extend the range and expertise of HDR students. Again, comingling with a variety of students gives a broader experience to the CALD students.

Survey Data and Analysis

Students who take part in the support initiatives offered at this university were invited to participate in a one-off hybrid of a questionnaire and semi-structured interview whereby some written answers were followed by further oral questions with answers notated. A heterogeneous sample of 11 students participated, based on convenience sampling. Questions focused on the stakeholders and support systems the students use or need in relation to specific aspects of IL. Each participant is an international student and each speaks English as a second language. Qualitative data from the interviews was thematically analyzed. The participants have been enrolled in their Higher Degree by Research for various periods of time, including pre-confirmation, post-confirmation, and some near to completion. This variety of experiences provides in turn a rich number of perspectives. Nonetheless, a common early theme across many interviews was that participants had not previously conceptualized "information literacy" or thought of themselves as embodying or acting in ways that were demonstrably information literate. Some had even googled "information literacy" after being invited to participate. Each interview opened however with the participant being presented with a list of actions and abilities which comprise being information literate and in these lists they could recognize actions or attributes they possess. Thus, while they did not have a self-identity as "information literate," they could recognize in themselves ways they were information literate or reasons they needed to be so.

Being an Information Literate Student

In response to a question whether or not they could explain the importance of information literacy in postgraduate studies, participants explained "you need to have a good understanding of the tools the university provides to be successful." "Because I work with data, it is important to interpret the numbers that [I] put in my manuscripts." Even though they had not thought of themselves in direct terms as information literate students, participants knew that "It is important so that I am sure that I get credible information that I can depend on." "In a PhD we will collect big data sets and then we have to manage and analyse them in order to come up with meaningful conclusions. In scientific studies managing an information library of literature related to our research problem, analysing the problem with available data is very important to disseminate our research findings."

Elements of Information Literacy

Participants were asked to identify (from a list provided: see "Appendix") the aspect of IL that they considered most important to the undertaking of their Higher Degree by Research. The ability to "think critically about information" emerged as a core need, but some participants took the idea further and recognized that as "second stage" and something only obtainable some way into a higher degree. Thinking

critically was also a precursor to the conceptual organization of ideas, whereby "thinking critically leads to an array of thoughts, which are generally structure-less. Then to construct a proper sense from them requires a great deal of hard work." Or thinking critically was a pathway to locating information, as it "will give me insight on finding more relevant papers" or obtaining valid results.

Becoming Information Literate

This chapter has already pointed out that although librarians are significant stakeholders they are not, as has been suggested in the past, the most significant sources of IL support. An important theme emerged from the survey: sources of support were multifaceted and found in a diversity of locations. Initially, when asked if their dissertation supervisors had any responsibility for inculcating information literature, participants did not immediately think their supervisors were responsible for developing students' information literacy. But again after being asked to consult a list of actions and attributes of information literacy (see "Appendix"), participants rethought that initial impression. One participant considered that their supervisor was there for "any subject matter related problems." However, this participant then added "They offer me help to critically analyse information and guide me to think further about it." Some thought as of their supervisors as stakeholders in becoming information literate. "Supervisors were my knowledge bank." Supervisors could also "help me to extend my ideas." In seeking support, a combination of supervisors, research librarians, a postgraduate student advisor, and dedicated language support emerged as an interlocking web of human resources.

From these different strands of support, participants recounted a range of capacities. "The research librarian helped me to expand my knowledge on how to formulate a research question" and library classes and librarians gave access to online information. But grammar and language, the structure of academic writing, and accessing templates of best practice, emerged as aspects of information literacy that were supported by a number of sources. The development of language emerged as being intertwined with the development of research ability: "The learning support academic has helped me to improve my language and therefore my research skills so that I can understand what I am reading and think about the information." Targeted language support therefore took a place as an aspect of information literacy. So too did the workshops on academic writing and presenting. Students who participated in the workshop on academic writing found that "it taught me how to organise my ideas clearly" and the workshop on presenting "improved my confidence in expressing my research ideas."

Conclusions

Information literacy (IL) is an essential attribute for all tertiary students, but its importance for CALD HDR students cannot be overstated. In brief, IL consists of the following elements:

- The ability to identify, retrieve, evaluate, adapt, and organize information
- The ability to comprehend academic discourse
- The ability to think creatively and critically
- The ability to work both independently *and* collaboratively
- The ability to use technology effectively
- The ability to access, analyze, evaluate, and create messages in a wide variety of media modes, genres, and formats.
- The ability to communicate ethically within a context of review and reflection

This important overview of IL should be sufficient to alert those in the tertiary education sector to the role that IL plays in the successful negotiation of academic discourse, particularly for CALD HDR students. The question then is not only the significance of IL but the most effective way of inculcating it. One of the most important factors is the benefit that comes from teaching IL in an accessible way across the tertiary sector. Traditionally, IL has been taught on campus by tertiary librarians, but it is the contention of this chapter that an effective learning and teaching resource is not solely based on the input of librarians nor of traditional written material, but is in fact located in a broad spectrum of academics and other university staff members who can provide support, advice, and encouragement on both an individual and a group level. Inculcating IL in this way underlines its importance but also provides much-needed reinforcement of the skills required by CALD HDR students.

Appendix

Elements of information literacy shown to participants

- The ability to find relevant information, using library resources
- The ability to access online sources
- The ability to understand information
- The ability to think critically about the information
- The ability to use the information for writing academic work
- The ability to understand the way academic writing is structured and presented
- The ability to write in a way that is clear, coherent, and grammatically correct
- The ability to use information ethically
- The ability to confer with academics (including the learning support academic)

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