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Cultural diversity and educational inclusivity: International students' use of online information

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INTRODUCTION

The complex nature of Australian higher education is intensified by the increasing cultural diversity of its student population and the escalating use of ICTs (information communication technologies) in teaching and learning (Boezeroy 2002; Harman 2004). This is a dynamic environment, responsive to technological advances and educational internationalisation, in which educators seek to reconcile the common goal of equitable outcomes with myriad differences in learner attributes and needs. Corresponding trends in curriculum design foster an independent, flexible and critical approach to learning, the development of both generic attributes and discipline-specific knowledge, and the incorporation of information literacy into the learning process.

This paper reports findings of the first part of an investigation into international students' use of online information. It presents a snapshot of the learners' experience, and discusses the role of information literacy education in this dynamic educational setting. The experiences of a group of students from nine different countries are analysed to illustrate aspects of cultural and linguistic diversity and their possible influences on study-related online information use. Key outcomes of this phase of the investigation are discussed, including the need to explore the potential of an inclusive information literacy response to enhance the online information use and learning outcomes of all students in a culturally diverse educational context.

BACKGROUND

The research reported in this paper brings together two vital elements of contemporary learning culture - the concept of information literacy and the expanding universe of online information resources. This opening section briefly defines these two elements and introduces key international student characteristics, and leads into the subsequent description and discussion of the research findings.

Information literacy

Information literacy (IL) is both a theoretical and a practical construct. It incorporates the use of information and communications technologies, including the vast array of online information resources discussed in this study. However IL reaches beyond IT skills to developing a critical, and ethical approach to information that integrates understanding, evaluation and knowledge creation. Information literacy has been described as the 'foundation for learning in our contemporary environment of continuous technological change' and the concomitant idea of information literacy education as 'the catalyst required to transform the information society of today into the learning society of tomorrow' (Bruce 2004, p. 8). At a recent forum supported by UNESCO and other groups information literacy was proposed as 'part of the basic human right of life long

learning' in supporting participative citizenship and socio-economic well-being in a globalised information society (International Meeting of Information Literacy Experts 2003).

Over recent years information literacy education has shown sustained development across all levels of education in Australia, to the extent that it has become a widely required graduate attribute and so central to the mission of many higher education institutions (Bundy 2004; Lupton 2004). The *Australian and New Zealand information literacy framework* (Bundy 2004), which was modeled on the American *Information literacy competency standards for higher education* (ACRL 2000), provides a practical framework for developing and implementing curriculum-based information literacy education.

A working definition commonly used by Australian educators and researchers describes information literacy as: 'An understanding and set of abilities enabling individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information' (Bundy 2004, p.3).

Online information resources

Online information resources encompass the wealth of learning resources and research data that are available in electronic format from online sources such as the World Wide Web, journal databases, library catalogues, course materials databases and unit websites. In the context of this study they include: electronic journal articles, e-books, popular and specialist web sites, course materials (such as unit-specific study guides and recommended readings) and online tutorials.

Using online information resources is recognised as a relatively complex multifaceted experience. So for example at one level online use involves definable actions - or behaviours - such as logging on to a database, entering search terms, and printing documents. At another level it involves cognitive effort, associated with selecting an appropriate database, determining useful search terms and evaluating search results. Both these aspects can be influenced by - or may stimulate - emotional responses, so affecting the individual's engagement with information resources. The significant impact of emotional responses on online use is demonstrated in the literature on library anxiety and attitudes towards 'library technologies' (Jiao & Onwuegbuzie 1997, 2004). Kuhlthau (2004) also demonstrates how varying levels of uncertainty at different stages of the search process can affect the individual's information seeking experience and outcomes

Kuhlthau (2004, p.206) represents information seeking as an interplay of cognitive, affective and behavioural aspects: 'People experience the information search process holistically, with an interplay of thoughts, feelings and actions'. The present study adds cultural and linguistic threads to this interplay.

International students

International students - or students from overseas countries with temporary study visas - represent a significant and growing proportion (currently about 17%) of the Australian student population (IDP Education Australia 2004). They come to Australia from all around the world and add to the already rich multicultural mix of Australian society

Research from Australia and elsewhere shows that students may encounter a wide range of social and educational challenges in adapting to life and study in an unfamiliar cultural environment, associated with differences in customs and interpersonal communication (Ballard & Clanchy 1997; Burns 1991; McSwiney 1995; Samuelowicz 1987). While some general patterns may be identified, the nature and impact of these challenges will vary from one individual to the next (Ramsay, Barker & Jones 1999), since their experiences can be affected by cultural and linguistic differences, as well as an array of personal variables. In the words of Jacobson & Williams (2000, p. 3):

International students may fall into a number of categories...They may be first-generation students: they might come from a variety of cultures; some may be graduate or returning students; and they may be lesbian, gay, bisexual or transgendered.

To varying degrees international students may need to adjust to new styles of teaching, learning and assessment, which often involve a shift from teacher-centred models of instruction based on authorised texts to more self-directed research-based learning that draws on virtually unlimited print and online information sources (Ballard & Clanchy 1997; Burns 1991; Mullins, Quintrell & Hancock 1995; Ramsay, Barker & Jones 1999; Robertson, Line, Jones & Thomas 2000; Samuelowicz 1987). These difficulties may be compounded by limitations in their previous library experience, use of electronic resources and information literacy (Baron & Strout-Dapaz 2001; DiMartino & Zoe 2000; McSwiney 1995).

INTERNATIONAL STUDENTS - A SNAPSHOT

The study presented in this paper seeks deeper understanding of students' use of online information resources and their related information literacy learning needs in a culturally diverse educational environment. It has two main aims:

- to identify difficulties in online use that are attributable to cultural or linguistic differences
- to foster the development of information literacy strategies that respond to related learning needs.

It constitutes a case study that focuses on international students - and several local students - at two Australian universities. This enables some comparison between the online information experience of international students in separate and integrated learning environments, as well as the identification of similarities and differences in online information use between international and local students. The student participants all take part in semi-structured interviews and an observed task, to ensure that the resulting picture incorporates their personal accounts with a more objective assessment of their online use. Critical Incident Technique (Flanagan 1954; Hughes in press) provides the methodological framework for data collection and analysis in this project.

The initial phase of the study, which is reported here, involved 12 international students who were enrolled at the Brisbane International Campus of Central Queensland University (CQU) in 2003. This participant group, composed of students from Japan, Taiwan, Malaysia, China, Thailand, Mexico, Poland, Israel and England, reflected the linguistic and cultural diversity of the CQU student population. Their ages, educational backgrounds and life experiences also varied widely since the group included recent school-leavers, individuals with previous study and professional experience and two mature-age students with no previous higher education. Even in terms of language there was a marked variation; although most were from non-English speaking backgrounds, two were virtually bilingual and one was a native English speaker.

Like many people adapting to new social or cultural environments (Ballard & Clanchy 1997; Burns 1991; McSwiney 1995; Ramsay, Barker & Jones 1999; Samuelowicz 1987) they reported differences between their home countries and life in Brisbane. The nature and impact of these differences varied from one individual to the next, but most frequently they claimed they had been challenged by variations in:

- social customs (such as formal & informal greetings, interpersonal interactions, daily routines and food)
- communication styles (including non-verbal exchanges)
- and marked differences in educational practice between Australia and their home countries

All the participants except the British student were second-language English speakers and to some degree they all encountered language barriers to their learning in Australia. Particular linguistic difficulties related to:

- adjusting to Australian English accents and informal interpersonal styles of communication.
- unfamiliar vocabulary ,

- 'academic English' (typically used in journal articles, textbooks and assignments); this proved a common problem for all, including British student who as a mature-aged student had no previous exposure to this formal written style

Perhaps the most significant challenges faced by these students as newcomers to Australian higher education related to differences in educational practices. A Malaysian and a Japanese student, for example were confronted by the informality of the classroom and student-teacher relationships, compared with the practice in their home countries where they were accustomed to attending quietly and respectfully to their teachers, rather than actively participating. Consequently they were reluctant to contribute to discussions and ask questions in class. Although these traits are frequently associated with approaches to learning in East Asian countries, a student from Poland was also surprised by Australian pedagogical styles, having previously been used only to formal lectures. On the other hand a student from Mexico was frustrated at times by the reticence and apparent lack of openness of his classmates, which he found particularly difficult in group work where - in his view - people often seemed to be too polite and unwilling to offer original ideas or take the lead in activities.

These educational differences were particularly marked with regard to their previous use of learning resources. Most of the students, irrespective of their cultural background, were accustomed to basing their study around set texts and had little previous experience of independent research, with little or no use of libraries or online resources for study. Consequently all twelve students were evidently surprised and challenged by the self-directed, problem-based styles of learning and related use of online information resources that were a feature of their courses at CQU.

INTERNATIONAL STUDENTS - ENGAGING WITH ONLINE INFORMATION RESOURCES

Most of the twelve student participants demonstrated effective practical IT skills and all but one of them reported frequent use of the Internet for personal interests and communication. However, none had used online information resources for study purposes prior to their enrolment at CQU. Results of the interviews and observed set task revealed generally limited and ineffective use of the online resources available, ranging across: the library catalogue, general reference, course-related materials, journal databases and specialist statistical, legal and company sources.

In particular there was evidence of:

- Little pre-planning of online search strategies or considered selection of keywords & synonyms
- Limited or unsatisfactory search results, often due to linguistic difficulties such as: spelling errors, limited vocabulary, comprehension and inability to quickly scan results lists and retrieved documents
- Misinterpretations of search results and documents due to differences in cultural experience - especially with regard to literary and religious allusions
- A general unreflective, non-critical approach to all aspects of the search process, especially the evaluation and selection of suitable resources
- Little exploration of alternative sources - or signs of self-directed learning - beyond the standard databases and websites specified by course materials or teaching and library staff
- While most of the students had approached library staff or lecturers for assistance, few had consulted the Library's online help guides and none had used the customised *Compass* online information literacy tutorial

On a more positive note several students had independently developed their own strategies for overcoming comprehension difficulties through use of their own language search engines and *Google's* translation tools. Another described his use of the synonyms option in *Ask Jeeves* as a way of extending his limited English language vocabulary to determine productive search terms.

The participants' attitudes towards online information use were generally positive. Most commonly mentioned features of online information resources were their time-saving nature and currency. The British student for example, found online information searching could be 'pleasurable' in 'turning a problem into a challenge'. Some others however found online information use tiring or frustrating; one person commented that 'too much computer makes you feel sick'. Unfamiliarity with online resources and their educational use causes anxiety for some students. A Malaysian student for example said he felt 'unsettled when we first started moving to databases ... back home ... we were taught to just quote from the book'.

The interplay between the behavioral, cognitive and affective facets of online information use described by Kuhlthau (2004) is reflected in the following comment from a Mexican participant:

When you don't find the articles ... you feel frustrated. But maybe it makes you think again ... and once you get the good one (search term) so arise many ... positive results ... so you feel the satisfaction - ah, that's good! - and be patient and don't panic, continue.

This brief statement encapsulates the student's actions (in searching for articles), thoughts and emotional responses and demonstrates the inter-relationship between his increasingly positive attitude and information seeking success.

KEY OUTCOMES FROM THIS PHASE OF THE RESEARCH

So what are the key outcomes arising from this phase of the research? And what priorities do they suggest for the next phase?

Insights into information use

Firstly, results of the investigation to date - as summarised above - have provided insights into the complex nature of online information use as experienced by students from culturally diverse backgrounds. This complexity overlays the previously recognised behavioural, cognitive and affective aspects with elements of cultural and linguistic difference.

Interestingly some of the more significant difficulties in online use revealed by this study are not unique to international students. For example, typing errors, hardware failures, accessibility problems, and coping with lengthy results lists occur commonly among online information users of all backgrounds.

Significant questions arise concerning the relatively limited range of online resources used by the students interviewed. So it would seem important to investigate issues such as: Why did the students generally use such a limited range of online information resources? Were they simply unaware of the information sources and tools available? Were they lacking the confidence or skills to explore different alternatives? Did they lack understanding of the purpose and application of online information resources for learning? Were they discouraged by technical or interface design aspects? Did they feel anxious or confused about using them? Answers to these questions would provide an informed basis for developing information literacy responses and designing usability improvements to online resources and tools.

Insights into information literacy and learning needs

Secondly, the investigation has provided insights into the information literacy and learning needs of international students. While previous research has revealed some of the relationship between information literacy and learning (Bruce 1997; Kuhlthau 2004; Limberg 2000; Lupton 2004) this investigation uncovers aspects of that relationship in cross-cultural contexts.

The needs of the students described above are complex and inter-related. Whilst acknowledging individual differences, it is possible to identify a general imbalance between these students' more effective IT skills and their generally less developed information literacy. Unfamiliarity with online information resources, linguistic limitations, and cultural and educational differences, can all

present barriers to effective learning in an ICT-dependent educational context. Although the ability to exploit desktop and communication software and navigate the World Wide Web are important skills, they are of limited value in a context of student-centred, research-based learning unless complemented by a critical approach to information use and knowledge construction.

While some difficulties in information use encountered by international students are strongly associated with cultural and linguistic attributes, others are of a more general nature. For example, vocabulary limitations and unfamiliarity with literary allusions may tend to be more challenging for international students, but other aspects such as interpreting academic documents and processing long search results lists may commonly affect students of all backgrounds, including local Australians. This suggests that perhaps the differences in online use between students from varying backgrounds may relate more to the degree of difficulty than by the nature of the difficulty itself. Consequently, in considering responses to international students' information literacy needs it would probably be more beneficial to concentrate on common ground rather than differences.

Perhaps we need to encourage students to build on their existing information literacy strengths, such as the analytical and problem-solving capabilities they develop through language learning experiences, as well as their familiarity with the internet and a variety of search engine facilities including online translation tools. It would also be worth considering how the strategies developed by some students - for example use of their own language search engines, online translation tools and synonyms lists offered by some search engines - might be adapted or promoted to assist others overcome language limitations.

The experience of these students demonstrates a close inter-relationship between information literacy and learning - and between information use and language development. It follows that their information literacy needs are not confined to technical aspects of online information use, but rather relate to a range of learning outcomes, including the development of analytical and communication skills. All this would seem to demonstrate the value of a holistic, curriculum-embedded model for information literacy education - an inclusive learning response.

The need to explore an inclusive learning response for information literacy education

Thirdly, the investigation suggests the need to explore an inclusive learning response for information literacy education that can address the diverse needs of international students. This may be conceived as a holistic and inclusive curriculum-embedded model for information literacy learning that fosters a critical, ethical and creative use of information and underpins knowledge construction across disciplines and across cultures; one that both addresses and draws strength from diversity. It fuses conceptions of information literacy as integral to the learning process (Bruce 1997; Lupton 2004) with those of educational inclusivity (Biggs 2003). Rather than focus on difference and deficit this holistic approach to information literacy promotes the learning of all students, including internationals. It would allow a seamless blending of discipline-specific knowledge creation, information literacy formation and language development. Its key aims would be to stimulate: a strategic and critical approach to information seeking and use; the exploration and exploitation of a widening range of information sources; and a self-directed approach to problem-solving and help seeking. Importantly, it would aim to foster not just the development of information capabilities, but also a confident, informed and reflective approach to information use. In this way it would incorporate the various behavioural, cognitive, affective, cultural and linguistic aspects of the information use experience mentioned previously - facilitating Kuhlthau's (2004, p. 206) perceived interplay of thoughts, feelings and actions.

The curriculum-embedded model for information literacy education envisages a close collaborative partnership between a variety of education professionals including: lecturers, information literacy educators, librarians, language teachers and learning advisers (Peacock 2001; Peacock in press). Underpinned by constructivist learning principles it would encourage international students to build on their varying knowledge and capabilities (such as personal internet use and language learning) in developing their information literacy. Most significantly it reflects John Biggs's (2003) constructive alignment model, in emphasising inclusivity. In an inclusive educational setting

international students are integrated into the educational 'mainstream' rather than separated as special (or problematic) groups. This offers benefits to all students - irrespective of background - to experience different styles of teaching, learning and interpersonal interaction and to develop intercultural awareness and communication. In this way it harnesses the learning potential inherent in both the similarities and differences of students' learning experience. Perhaps most importantly, it allows the creation of an authentic learning context that reflects the internationalised nature of learning and communicating in the information age.

CONCLUSION

This discussion of international students' online information use reveals the importance of well developed information literacy for effective learning in the current Australian educational context that is characterised by increasing cultural diversity and predominance of ICTs (information and communication technologies). The proposed inclusive learning response to international students' information literacy needs is not limited to generic skills and the mechanics of online information use, but rather fosters an independent, reflective, contextualised and research-based approach to learning.

This kind of holistic approach to information literacy learning addresses the behavioural, cognitive and affective aspects of information use and harness the learning potential inherent in both the similarities and differences of students' learning experience. It embraces cultural and linguistic diversity, fosters a supportive and inclusive learning environment and so promotes equitable learning outcomes for all students in this culturally diverse environment.

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