

Socio-cultural approach to digital information literacy of postgraduate students in Sri Lanka

R. P. P. Ranaweeera¹, A. D. B. Kumara² & G. D. M. N. Samaradiwakara³

¹National Institute of Library and Information Science, University of Colombo, Sri Lanka

²University of Moratuwa, Moratuwa, Sri Lanka

³University of Sri Jayewardenepura, Nugegoda, Sri Lanka

e-mail: prasanna@nilis.cmb.ac.lk; buddhink@lib.mrt.ac.lk; mnsamara@sjp.ac.lk

ABSTRACT

In today's information era, combined with technological advancement, most of the information is presented in the digital form. Therefore, the individuals who deal directly with information should be fluent in handling digital information or they should be digital information literate, since creating a digital literate student community is responsibility of librarians and Information Science and Technology teachers. The current study is a socio-cultural approach to investigate the digital information literacy level of postgraduate students in Sri Lanka. Hundred and fifty subjects from two reputed universities in Sri Lanka were included in the study, and the results clearly indicate a higher shift towards digital information literacy skills among the post graduates. Based on this study, recommendations have been made to develop the infrastructure facilities at university level, and to facilitate the availability of more digital information literacy programs for postgraduate students through their respective libraries.

Keywords: Information literacy; Digital information literacy; Socio-cultural theories; Digital information literacy-Sri Lanka

INTRODUCTION

Since the 1980's 'Information Age' has been one of the key terms used to describe today's world. A society characterized by a high level of information intensity with creation, distribution, use, integration and manipulation is called an 'information society'. Information literacy is the prerequisite for a developed society and individuals from primary school to senior citizens must attain a certain level of information literacy in order to face the challenges of the Information Age (Edzan 2008). Information literate individuals understand more than how to find information, they understand its limitations and the need to examine how they use information, and they understand how to manage and communicate information (Nawarathne and Singh 2013).

One of the most salient features of the information society is the continuous change. As the amount of information increases, technology gains momentum, the use of

Ranaweera, R. P. P., Kumara, A. D. B. & Samaradiwakara, G. D. M. N.

technology is becoming widespread and societies are restructuring themselves in ways that react to these changes (Kurbanoglu, Akkoyunlu, and Umay 2006). Internet is the super highway of information and a vast array of digital information comes through Internet. Although the library and information professionals are responsible in making the students information technology literate, information literacy does not merely depend on library skills and it is focus using various information sources independently. However, the teaching information literacy competencies cannot be removed. With this hasty exploit of information which comes through widespread technology, the need is raised for expanding the definitions of information literacy. The new skills requirements related to the rapid development of new media and technologies have been given names and labels, such as information technology literacy, digital information literacy and media literacy (Limberg, Sundin, and Talja 2013).

Digital information literacy is one aspect of information literacy and very relevant for the 21st century, because the use of computers, other technological devices, the Internet and the World Wide Web has become integral to many forms of information access, communication and knowledge generally (Chandrashekar, Ramasesh, and Raju 2012). In this regard educational settings where change manifested itself as the creation of more diverse and digitally enhanced learning environments for their students, or librarians attempt on enhancing their students' digital information literacy skills through developing more and more digital resource collections and courses as well. According to (Hegarty et al. 2010) digital information literacy is the ability to recognize the need for, to access, and to evaluate electronic information. The digitally literate can confidently use, manage, create, quote and share sources of digital information in an effective way.

Digital information literacy level in Sri Lanka

The information society is seen to manifest itself in a variety of ways: in networks, in the economy, in technology, in expertise, content and action, leading to internationalisation and in the very idea of postmodernism (Viherä and Nurmela 2001). Not all countries in South Asia have attained the same level of development as an "information society". An island nation in South Asia, Sri Lanka, has a literacy rate of over 90%, which is one of the highest in the region. However, according to the survey of last year conducted by the Department of Census and Statistics, the digital literacy of the country had been far behind, at less than 10% in 2004. In the context of a national objective, the Sri Lankan government recognized the vital importance of developing the digital literacy skills of the nation. The Sri Lankan government's e-Sri Lanka strategy outlines the country's vision for the development of an information society and forms the basis for initiatives related to ICT development (*Mahinda Chinthana* 2005). In order that all citizens obtain the benefits of ICT, they need to be digital literate.

Even though Sri Lanka is a country with a small geographical span, the power of ICT plays a major role in almost all the fields. As such, Sri Lankan higher education is becoming increasingly technology-intensive (Aturupane 2008), since digital information is becoming essential to almost every aspect of modern academic life. This rapid influx of the new technologies and tools for interacting with them came at a time when libraries are struggling to share data across their own institutions (Marty and Kazmer 2011). Further, lecturers and librarians have been compelled to improve their own

Socio-cultural approach to digital information literacy

digital information literacy skills and knowledge; in order that they will be better empowered to meet their students, with competency in this technological context, and feel better equipped to work with the students on improving students' information literacy skills. As a result almost all the university libraries in Sri Lanka have adopted various methods to improve the information literacy level of the students in the technological environment, ranging from limited orientation programs to dedicated information literacy programs with credit based and non-credit based methods.

This means that there is a need as never before, especially for academics and researchers to be information literate in this digital context. They require digital information literacy, and a degree of skill using computers and the Internet to be successful players in the workforce in a knowledge-based society. Therefore, it is clear that to live and work in the technology-enabled world of the 21st Century, digital information literacy skills are essential. With this objective in mind, this study was carried out to examine the digital information literacy among postgraduate students and to set the priorities for the promotion of digital information literacy among them. However, there has been very little effort to investigate such an objective in the literature of Sri Lanka. Therefore, the current study will be very significant.

LITERATURE REVIEW

In the Library and information science, the concept of information literacy refers to purposeful information practices in a society characterized by almost limitless access to information and information practices in digital environments (Limberg, Sundin, and Talja 2013). Most researchers have focused on access to digital information with the ICT revolution.

Literature demonstrates that a number of studies have been made on the use of e-resources by lecturers, research scholars and students all over the world. While a few researchers have revealed that there is low access to e-resources (Bashorun, Isah, and Adisa 2011); (Ojo and Akande 2006), the majority of researchers (Khan and Raju 2014) (Peiris and Peiris 2013); (Chandrashekhara, Ramasesh, and Raju 2012)(Hegarty et al. 2010)(Maharana and Mishra 2007) have revealed that there is a positive shift towards digital information literacy skills and capability even in Sri Lanka. For the majority this manifested as an increase in their digital information literacy scores and changes in the way they used and managed digital information. This included a change in attitude towards more open sharing of information, and a willingness to learn new technologies.

Socio-cultural theoretical perspectives

While growing attention is being paid to the researches on digital information literacy, less interest has been shown for theoretical perspectives. This may be because of the unavailability of particular theoretical underpinnings specifically for digital information literacy. However, the meaning of the term information literacy varies according to the theoretical lens from which it is approached. Although there are various theoretical approaches on information literacy, the socio-cultural perspective involves particular theoretical assumptions about the ways in which digital environments and tools reshape

Ranaweera, R. P. P., Kumara, A. D. B. & Samaradiwakara, G. D. M. N.

conditions for learning. It addressed the critical importance of social and cultural context to human cognitive development (Vygotsky 2012).

The socio-cultural perspective emphasizes that information seeking is carried out for a specific purpose in a specific practice, for instance for writing an academic thesis, and with the help of tools such as a library catalogue, a bibliographic database or Google Scholar. It emphasizes for information literacy research, not least for understanding how people learn to seek and use information, relate to how practices and digital media (and other tools for interacting with information) transform each other (Limberg, Sundin, and Talja 2013). Further, they state, for information literacy education this implies that it is important to reveal and make explicit the perspectives, values, and beliefs connected to specific tools for information seeking and how the application and understanding of these tools differ in different practices. This implies that seeking, critically scrutinizing, compiling or publishing information are always to some extent social activities (Säljö 2005). For example, the ways in which students today understand information seeking is integrated with their understanding of the physical objects for information seeking, such as Google, blogs and Wikipedia.

Further, the socio-cultural perspective emphasizes the material aspects of digital information (Limberg, Sundin, and Talja 2013). For example, the way in which a web page is structured and functions will influence the conditions for interacting with it. This means that a kind of evaluation of digital information is utilized.

Considering the above facts, the socio-cultural theoretical approach has been adopted for this study. The application of socio-cultural theory is, however, still new in information literacy research (Lloyd and Williamson 2008)(Wang 2007)(Tuminen, Savolainen, and Talja 2005). This study has been undertaken with the objective in mind to fill the gap in the theoretical approach to digital information literacy; and through its focus on information and information practices, to illustrate that the interaction between information seeking and use, and learning under digital culture is of vital importance.

RESEARCH DESIGN AND METHODOLOGY

Socio-cultural theories are based on the social constructivist paradigm which considers that knowledge is constructed socially through interaction and shared by individuals (Bryman 2012). Within the socio-cultural perspective information use should be studied in relation to the tools through which they are accessed and based on the social practices where they are carried out. Therefore, the socio-cultural perspective often favors ethnographically oriented research, which consists of rich qualitative descriptions of information use in their 'natural settings' in digital culture. However, this research contributes to the knowledge base by using a positivistic approach with quantitative methods, based on socio-cultural theoretical underpinnings.

The conceptual framework of the study is based on the concepts of socio-cultural theoretical underpinnings and past literature on information literacy under digital environment.

Socio-cultural approach to digital information literacy

Based on the above facts, some aspects were formulated in this taxonomy, to identify a digital information literate person. These were;

1. Recognition (of the information needed)
2. Tools (to search the information)
3. Access (obtaining the information)
4. Evaluation (of the reliability of the information and the effectiveness of the tools) and
5. Use or application (to create new understandings)

The conceptual framework of the study is depicted in Figure 1.

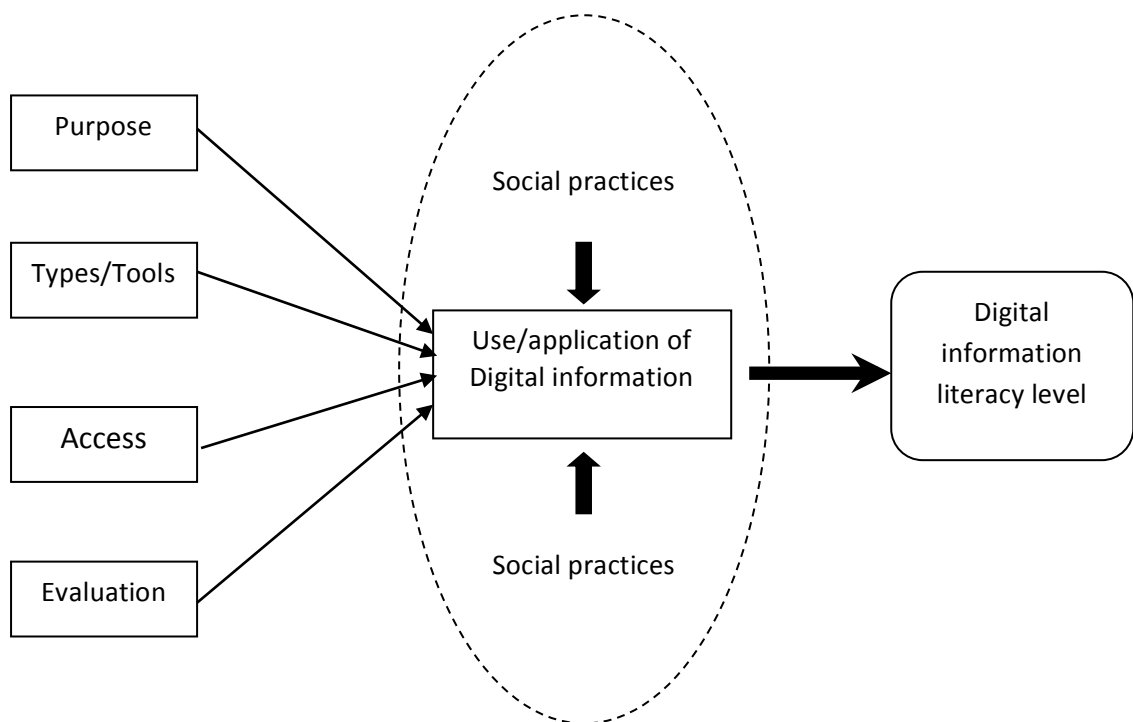


Figure 1: Conceptual framework of the study

The research design is based entirely on the conceptual framework. Conceptual framework indicates the identification of digital information through their purposes, types of information need, and tools that can be used to access them, and then to evaluate whether they are best suited to fulfill the information need. These aspects may complete the process of identifying the digital information literate person.

The research was designed in a manner so that the survey research strategy could be adopted for the study. Established data collection methods were followed in the selected research strategies, and therefore structured questionnaires were used as the data collecting methods based on the survey strategy. Questionnaires were electronically distributed during July-August 2014. Hundred and forty (140) post

graduate students from the University of Colombo and the University of Moratuwa were drawn for the investigation. The method of selection of the sample was based purely on purposive sampling, as the researcher wanted to select the subjects scrupulously based on their usage of digital information.

RESULTS OF THE STUDY

The majority of the respondents (67.8%) were from the University of Moratuwa and 32.2% were from the University of Colombo. The sample consisted of one PhD student; two M Phil students and the rest of the participants (97.9%) were those following a Master's Degree in the respective universities. Most of the post graduate students (42.9%) were between the ages of 31-40 years. Only 18.6% were above 40 years and 38.6% below 30 years. Results further showed that a lower percentage (43.9%) of post graduate students had followed an information literacy course under digital environment.

However, a majority of the respondents (67.39%) have more than ten years experience with computer and Internet use. Further, a higher percentage (58.99%) have rated themselves as having a high computer literacy level. 40.29% have rated themselves as having a moderate level of competence and only 0.72% had a poor level. These results reveal that there is a trend among postgraduate students to shift towards a digital environment.

Purpose of using digital information

As the first and last components of digital information literacy, the identification of the need of digital information literacy for their academic purposes, and measuring whether these purposes aim to create new knowledge was evaluated.

As depicted in Table 1, the largest percentage (91.4%) has identified that they need digital information literacy to keep their knowledge up-to-date. 88.6% needed digital information for their assignments, and 80.7% identified the need in order to support research.

Only 40% had sought digital information for writing their publications. However, the results reveal that more than 50% of the respondents have identified the need of digital information for almost all their academic purposes and no significant differences have been found with gender, age, ethnicity, community, and religion in relation to computer literacy.

Table 1: Purpose of using digital information

Purpose	Percentage
To update knowledge	91.4% (128)
To support research (dissertations)	80.7% (113)
To write publications	40.0% (56)
To prepare materials/ assignments	88.6% (124)
To prepare for exams	79.3% (111)
Regarding seminars/ conferences/ workshops	63.6% (89)

These results undoubtedly indicate that a majority of respondents have used digital information to create new knowledge. The respondents have identified the need of digital information to add new knowledge to their knowledge base at a higher percentage. This means that these scholars are moving faster on the path towards competency in digital information literacy.

Sources and tools used for digital information searching

According to the conceptual framework of the study, digital information sources and the tools employed to search digital information are also important components of measuring the digital information literacy level of the postgraduate students.

Table 2: Digital information sources use

Sources	Percentage
E-journals	76.3% (106)
E-articles	84.9% (118)
E-books	88.5% (123)
E-dissertations or theses	51.1% (71)
E-databases	43.2% (60)
Subject gateways	26.6% (37)
E-archives	34.5% (48)
E-forums/ groups/ mailing lists	64% (89)

As shown in Table 2, the highest percentage (88.5%) of respondents has used e-books to obtain digital information and a considerable percentage (84.9%) had referred e-articles. However, results reveal that a considerable percentage of respondents had used electronic formats of the major scholarly materials such as books, journals, scholarly articles, and theses, etc.

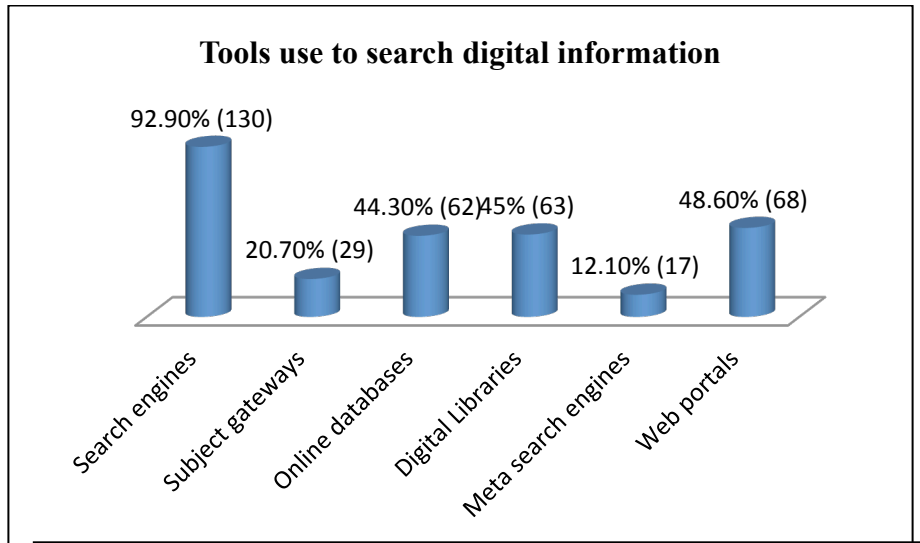


Figure1: Tools used to search digital information

As shown in the Figure 1, majority of the postgraduate students (92.9%) have used search engines to find digital information and substantial percentage of participants have used digital libraries, online databases and web portals too.

Access to digital information

Respondents were queried regarding the frequency at which they accessed digital information. More than 50% of the respondents (54.7%) accessed digital information several times a day. Only 21.6% accessed about once a day and 16.5% accessed about once a week. The rest of the participants stated that they access digital information at least once a month. However, the frequency of accessing digital information differs significantly (p -value=0.002), depending on whether respondents have followed an information literacy course or not.

Evaluation of digital information

Postgraduate students were queried regarding the criteria used to evaluate the reliability of the information, and the effectiveness of the tools.

According to Table 3, majority of the respondents rated that all these criteria are important or very important. Only a very few rated that some criteria are not important. Others have rated that these criteria are less important, or neutral. These results indicate that the respondents are reasonably competent to evaluate the digital information they use.

Table 3: Evaluation of criteria of digital information

Criteria	Percentages				
	Not important	Less important	Neutral	Important	Very important
Reliability	0	5.1% (7)	2.2% (3)	40.4% (55)	52.2% (71)
Authenticity	5.9% (8)	7.4% (10)	11.0% (15)	44.9% (61)	30.9% (42)
Currency (Up to date)	0.8% (1)	5.4% (7)	16.3% (21)	42.6% (55)	34.9% (45)
Coverage	0.7% (1)	2.9% (4)	8.0% (11)	52.6% (72)	35.8% (49)
Accessibility	0	4.5% (6)	6.0% (8)	39.6% (53)	50.0% (67)
Comprehensiveness	0	2.9% (4)	10.3% (14)	51.5% (70)	35.3% (48)
Usability	2.2% (3)	2.2% (3)	8.8% (12)	44.5% (61)	42.3% (58)
Objectivity	0	2.9% (4)	11.0% (15)	50.7% (69)	35.3% (48)

CONCLUSIONS AND RECOMMENDATIONS

Since digital information literacy skills have become essential with the technological advancement in the world, the current study examined the digital information literacy level of the postgraduate students by using a socio-cultural theoretical base. Results revealed that the recognition of the information need through common scholarly practices, and application of digital information to create knowledge, is at a high level. Postgraduate students have frequently used the digital formats of the major scholarly materials such as books, journals, scholarly articles, and theses, mostly via search engines, digital libraries and web portals which are the most common tools used to search digital information. It was revealed that more than 50% of the postgraduate students accessed digital information several times a day signifying a rapid trend towards using digital information. Finally, it was found that the post graduate students are knowledgeable to check the reliability of digital information, via some criteria such as reliability, authenticity, currency, coverage, accessibility, comprehensiveness, usability and objectivity, as these were rated as important and very important.

This study clearly reveals that the digital information literacy level of the postgraduate students is extensive and that there is a rapid growth towards using digital information under new technological developments. This seriously impacts on university libraries to take measures such as procuring more digital collections, and conducting systematic information literacy courses, to enable the new generation to ascend the digital information ladder towards the digital era. Therefore, recommendations were made to develop infrastructure facilities at university level, and to facilitate the availability of more digital information literacy programs for postgraduate students, in order to enhance their digital information literacy skills further.

REFERENCES

- Aturupane, Harsha. 2008. Celebrating 60 Years of Educational Progress and Challenges in Education in Sri Lanka. In . Westminster, London: Council for education in the commonwealth. <http://www.cecomm.org.uk/resources/reports-a-conferences/126-celebrating-60-years-of-educational-progress-and-challenges-in-education-in-sri-lanka>.
- Bashorun, M., Abdulmumin Isah, and M. Y. Adisa. 2011. User Perception of Electronic Resources in the University of Ilorin, Nigeria (UNILORIN). *Journal of Emerging Trends in Computing and Information Sciences*, 2 (11), 554–62.
- Bryman, Alan. 2012. *Social Research Methods, 4th Edition*. 4th edition. Oxford ; New York: Oxford University Press.
- Chandrashekhara, M., C. P. Ramasesh, and C. Raju. 2012. Digital Information Literacy among the Post Graduate Students of University of Mysore: A Study. In , 660–66. Mangalore. <http://eprints.uni-mysore.ac.in/id/eprint/16676>.
- Edzan, N. N. 2008. Information Literacy Development in Malaysia: A Review. *Libri* 58 (4), 265–80. doi:10.1515/libr.2008.027.
- Hegarty, Bronwyn, Merrolee Penman, Oriell Kelly, Lynn Jeffrey, Dawn Coburn, Jenny McDonald, New Zealand Ministry of Education (moe), et al. 2010. *Digital Information Literacy: Supported Development of Capability in Tertiary Environments: Final Report, Digital Information Literacy: Supported Development of Capability in Tertiary Environments: Final Report*. <http://www.voced.edu.au/node/8026>.
- Khan, Khaisar Muneebulla, and C. Raju. 2014. Online Information Literacy among Research Scholars of the University of Mysore – a Study. In , 629–37. Mangalore. <http://eprints.uni-mysore.ac.in/16707/>.
- Kurbanoglu, S., Buket Akkoyunlu, and Aysun Umay. 2006. Developing the Information Literacy Self-efficacy Scale. *Journal of Documentation*, 62(6), 730–43. doi:10.1108/00220410610714949.
- Limberg, Louise, Olof Sundin, and Sanna Talja. 2013. Three Theoretical perspectives on Information Literacy. *Human IT: Journal for Information Technology Studies as a Human Science* 11 (2). <http://ojs.blr.hb.se/index.php/humanit/article/view/69>.
- Lloyd, Anne, and Kirsty Williamson. 2008. Towards an Understanding of Information Literacy in Context Implications for Research. *Journal of Librarianship and Information Science* ,40(1), 3–12. doi:10.1177/0961000607086616.
- Maharana, Bulu, and Champeswar Mishra. 2007. A Survey of Digital Information Literacy of Faculty at Sambalpur University. *Library Philosophy and Practice (e-Journal)*. <http://digitalcommons.unl.edu/libphilprac/144>.
- Mahinda Chinthana*. 2005. Election manifesto. <http://www.priu.gov.lk/mahindachinthana/MahindaChinthanaEnglish.pdf>.
- Marty, Paul F., and Michelle M. Kazmer. 2011. An Introduction to Involving Users. *Library Trends*, 59(4), 563–67. doi:10.1353/lib.2011.0019.
- Nawarathne, I.M, and A.P. Singh. 2013. Information Literacy Programme Conducted by the Sabaragamuwa University of Sri Lanka: General Overview. *International Journal of Information Dissemination and Technology*, 2(4), 219–23.
- Ojo, R. A., and S. O. Akande. 2006. Students' Access Usage and Awareness of Electronic Information Resources at the University College Hospital, University of Ibadan, Nigeria. *Lagos Journal of Library and Information Science* 3 (1): 16–24. doi:10.4314/ljlis.v3i1.35515.

Socio-cultural approach to digital information literacy

- Peiris, Nd, and BI Peiris. 2013. Use of Electronic Information Resources by Postgraduate Students: A Case Study. *Journal of the University Librarians Association of Sri Lanka*, 16(1). doi:10.4038/jula.v16i1.5197.
- Säljö, Roger. 2005. *Lärande & Kulturella Redskap. Om Lärprocesser Och Det Kollektiva Minnet [Learning and Cultural Tools: On Learning Processes and Collective Memory]*. Norstedts Akademiska Förlag. <http://gup.ub.gu.se/publication/35142-larande-kulturella-redskap-om-larprocesser-och-det-kollektiva-minnet>.
- Tuminen, K, R Savolainen, and S Talja. 2005. Information Literacy as a Socio-Technical Practice.75(3), 329–45.
- Viherä, Marja-Liisa, and Juha Nurmela. 2001. Communication Capability as an Intrinsic Determinant for Information Age. *Futures*, 33 (3–4), 245–65. doi:10.1016/S0016-3287(00)00070-7.
- Vygotsky, Lev S. 2012. *Thought and Language*. MIT Press.
- Wang, Li. 2007. Sociocultural Learning Theories and Information Literacy Teaching Activities in Higher Education. *Reference & User Services Quarterly*, 47(2), 149–58. doi:10.5860/rusq.47n2.149.

Ranaweera, R. P. P., Kumara, A. D. B. & Samaradiwakara, G. D. M. N.